OCTOBER 5, 1929

Railway Age

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Alphabetical Index to Advertisers—Page 80

Buyers Directory of Advertisements—Page 74

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Published weekly by Simmons-Boardman Publishing Company, 34 North Crystal Street, East Stroudsburg, Pa. Entered as second class matter, March 9, 1928, at the Post Office at East Stroudsburg, Pa., under the act of March 3, 1879. Address communications to 30 Church St., New York City.

Published every Saturday by the Simmons-Boardman Publishing Company, 34 North Crystal Street, East Stroudsburg, Pa., with executive offices at 30 Church Street, New York

All communications should be addressed to the New York Office, 30 Church Street

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The Railway Age is a member of the Associated Business Papers (A. B. P.) and of the Audit Bureau of Circulations (A. B. C.)

Subscriptions, including 52 regular weekly issues and special daily editions published from time to time in New York, or in places other than New York, payable in advance and postage free; United States, Mexico and Canada, $6.00. Foreign countries not including daily editions $8.00.

Subscriptions for the fourth issue each month only (published in two sections, the second of which is the Motor Transport Section) payable in advance and postage free; United States, Mexico and Canada, $1.00; foreign countries, $2.00. Single copies, 25 cents each.

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name Registered U. S. Patent Office.

Vol. 87 October 5, 1929 No. 14

In this Issue

Unusual Retaining Wall Proves Success on the P. & L. E. ..... Page 807

A description of structure at Rankin, Pa., where precast concrete units on a slag foundation retain true alinement in spite of poor subsoil conditions.

Illinois Central Reduces Exceptions 813

C. G. Richmond, superintendent of stations of this road, tells how improved freight handling and employee education contribute to unusual accomplishment.

The Automobile Goes to Work for the Great Northern 822

Tells how this road turns to use of trucks to aid maintenance forces and how these highway vehicles have become big factors in supply work.

EDITORIALS

Wheat Prices and Freight Rates 803
Draft Gear Progress 804
A Waste of Long Standing 805
Would Machine Methods Make Cost Accounting Feasible? 806
September Equipment Activity 806
A Budget Committee on a Small Railroad 806

GENERAL ARTICLES

Unusual Retaining Wall Proves Success on the P. & L. E. 807
Treasury Officers Meet 810
Old Portage Railroad Commemorated 811
Increased Carloading Expected 812
Illinois Central Reduces Exceptions, by C. G. Richmond 813
C. V. Receivership to End 815
Co-operative Advertising for Passenger Business, by D. M. Bowman 816
Traveling Engineers Conclude Chicago Meeting 817
Freight Car Loading 821
The Automobile Goes to Work for the Great Northern, Part I 822
Conditional Control of B. R. & P. by B. & O. Recommended 827

LOOKING BACKWARD 828
COMMUNICATIONS AND BOOKS 829
ODDS AND ENDS OF RAILROADING 831
NEWS OF THE WEEK 832

The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

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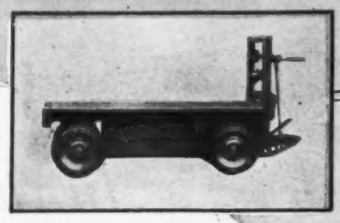

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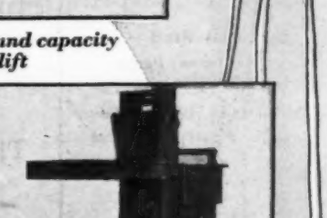

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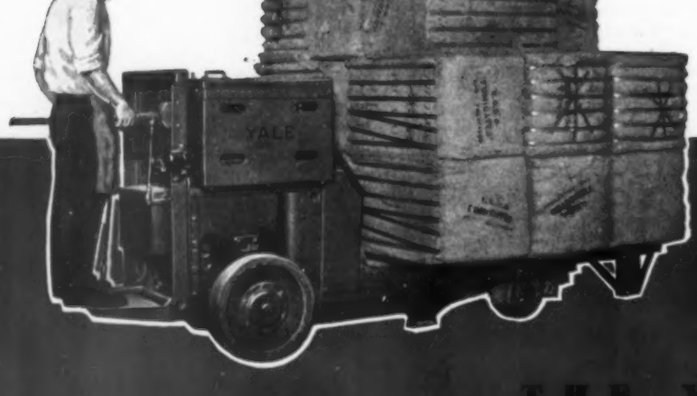


THE YALE & TOWNE

Stamford, Connecticut

Railway Age

Vol. 87, No. 14 October 5, 1929

Table of Contents Appears on Page 5 of Advertising Section

Wheat Prices and Freight Rates

THE emergency rates on export wheat put into effect by the railways on May 29 expired on September 30. These rates were made at the request of the national administration for two purposes. One of these was to stimulate the movement of wheat which had accumulated in unprecedented quantities in terminal elevators throughout the country. The other was to increase the price of wheat in this country, and thereby indirectly enable the farmer to realize more from the sale of it.

A doctrine that has long been enunciated by most spokesmen for the farmers is that the price of wheat in the United States is the price at Liverpool, less the freight charges for moving it from this country to Liverpool, and therefore a reduction of the transportation charges will tend to raise the price in this country. This is also one of the principal arguments advanced for the development of inland waterways, and especially of the proposed Great Lakes-St. Lawrence waterway.

Reasoning of Waterways Advocates

The unqualified way in which this doctrine is stated by advocates of waterways may be illustrated by the following quotations from a pamphlet recently written and distributed by Charles P. Craig, executive director of the Great Lakes-St. Lawrence Tidewater Association: "The prices quoted on our so-called 'primary markets' follow closely the rise or fall of prices on the great consuming markets of Europe. The 'spread' between Liverpool and any primary American grain market is chiefly a matter of transportation costs —not the actual costs on a specific shipment—but the normal costs of grain movement at the usual rates. And just as there is taken out of the pocket of the farmer who ships a car of grain to the primary market all the freight charges on such shipment, just so there is taken out of his pocket, on every bushel of grain, whether it is exported or not, the cost of shipment by the usual route from the primary market to Europe." Reasoning from these premises the waterway advocate reaches the conclusion that a reduction of freight charges on wheat from this country to Liverpool necessarily will increase the price of wheat in this country, as compared with the price at Liverpool, and that the advantage in price thus gained will find its way into the pocket of the American farmer. He maintains that the improvement of waterways will reduce the cost of transportation, and that therefore waterways should be improved.

The changes in wheat prices that have occurred since the proposed reduction of rail rates was announced have been unusually interesting. What light do they throw upon the extent to which transportation charges upon export wheat actually do determine the price of wheat in the United States?

Rates Reduced—Wheat Prices Fall

Prior to May 29 the rail export rates on wheat from Chicago were, via Baltimore, 12.6 cents per bushel; via Philadelphia, 12.9 cents, and via New York 13.5 cents. The ocean rate from Atlantic ports to Liverpool was 4½ cents. The reduction in the rail rate from Chicago to the ports mentioned was 3.3 cents. The ocean rate remained virtually unchanged. The total transportation charge from Chicago to Liverpool was therefore reduced about 3.3 cents a bushel. For example, via Baltimore, prior to May 20 it was 17.1 cents, and subsequently 13.8 cents; via New York it was previously 18 cents, and during the time the emergency reduction was in effect it was 14.7 cents. The emergency reduction in the rail rates from Kansas City to Gulf ports was about 6.6 cents a bushel.

On the theory that the price of wheat in the United States is the price at Liverpool, less the transportation charges, the price at Chicago before the rate reduction should have been approximately 17½ cents a bushel less than the price at Liverpool, and during the time that the emergency rates were in effect about 14 cents a bushel less than at Liverpool. Public announcement of the proposed emergency reduction in rates was made on May 2. From January 1 to that date the price of wheat at Liverpool had exceeded the price at Chicago by 3½ to 16⅛ cents. The difference had never

equalled the combined freight charges by rail and ocean. In the week ended May 2 prices at Liverpool ranged from 7¼ to 9½ cents higher than at Chicago.

The announcement that the reduction of rates would be made was followed immediately by declines of prices at Liverpool and Chicago, and in fact, in other markets throughout the world. In the week ended May 4 the price of July wheat at Liverpool ranged from $1.24½ to $1.26⅝, and at Chicago from $1.15 to $1.19⅜. The reduction of rates was made on May 29, and in the week ended June 1 the range at Liverpool was from $1.10¾ to $1.15⅞, and at Chicago from 96 cents to $1.03¾. On the theory that the price in this country is the price at Liverpool less the freight charges, the reduction in rates should at least have caused the decline in prices at Chicago to be less than at Liverpool, but the exact opposite occurred. In the week ended May 4, before the reduction in rates was made, the range of prices at Chicago, as already stated was 7¼ to 9½ cents less than at Liverpool. In the week ended June 1, after the reduction in rates had gone into effect the range at Chicago was 12⅛ to 14¾ cents less than at Liverpool.

Up to that time the evidence clearly did not support the theory that the price in this country is determined by the price at Liverpool, and is the price at Liverpool less the freight charges. The freight charges had been reduced, and not only had the price at Chicago declined instead of increasing, but it had declined more than the total freight charges to Liverpool, and had declined substantially more than had the price at Liverpool.

Freight Rates Unchanged—Wheat Prices Advance

There followed soon afterward advances in the prices of wheat. Information began to flow in that the world's production was going to be much less than had been anticipated. Throughout June and July prices increased, until in the week ended July 27 the range of July wheat at Liverpool was $1.46⅛ to $1.51 and at Chicago $1.37¾ to $1.44½, while the range of December wheat at Liverpool was $1.54⅝ to $1.59⅞, and at Chicago $1.49¼ to $1.54¾. But it is an outstanding fact that at no time was the difference between the prices at Liverpool and Chicago equal to the transportation charges. The rate for moving wheat from Chicago to Liverpool, via New York, for example, remained steady at about 14.7 cents while in the week ended July 27 the differences between the prices of December wheat at Chicago and Liverpool were only 5½ to 5⅜ cents.

In August the price of wheat declined. In the week ended August 31 the range at Liverpool was $1.43 to $1.47⅝, and at Chicago, $1.39⅜ to $1.43⅜. And still the difference between wheat prices at the two points was less than the freight charges, the difference in prices in the week ended August 31 being only 3⅝ to 4¼ cents, or only about one-fourth as great as the freight charges from Chicago to Liverpool.

What determines wheat prices in the United States? The *Railway Age* is not an expert upon that subject. It has been conclusively demonstrated, however, that certain influences to which much weight has been given by many persons in the past do not determine them. An emergency reduction of freight rates was made, and during the four months it was in effect the cost of moving wheat from Chicago to Liverpool remained steady at about 14½ cents a bushel. Meantime, the price at Chicago, the largest of our "primary markets" ranged from as low as 96 cents to as high as $1.55 a bushel. This range of 59 cents was more than four times as great as the transportation charges from Chicago to Liverpool and 18 times as great as the emergency reduction in rates. These facts demonstrate conclusively that the price of wheat at Chicago was not to any considerable extent determined by the transportation charges. Furthermore, during this period the difference between wheat prices at Chicago and Liverpool ranged from as high as 14¾ cents a bushel to as low as less than nothing at all, because at one time the price of wheat at Chicago was actually higher than at Liverpool. In view of such figures it is easily possible to accept the statement recently made by one of the largest wheat exporters in the United States that, "Our experience this crop year has certainly demonstrated conclusively that the world price does not determine the price of our wheat". If it is not determined by transportation charges or the world price, or both of them, by what is it determined? Apparently it is principally determined by the supply and demand for wheat in the United States.

The developments of recent months have exploded the theory that freight rates from this country to Europe determine the price of wheat in this country, but it remains to be determined whether this will produce results sufficient to compensate the railways for the earnings they have lost owing to the emergency reduction of rates.

Draft Gear Progress

ONE of the outstanding reports presented at the June convention of the Mechanical Division at Los Angeles, Cal., was that pertaining to draft gears and embodying the complete report of recent American Railway Association laboratory tests at Purdue university. The accurate and comprehensive character of these draft gear tests is convincingly demonstrated in the 313-page report, which constitutes an important contribution to the knowledge of draft gear action under laboratory test conditions.

The indications are that these tests have to date more than justified the expense of conducting them, owing

to interest stimulated in adequate draft gear performance and to numerous changes and improvements suggested as a result of the tests and already incorporated in certain of the draft gear designs. The function of a draft gear, however, is to protect car equipment and lading from shocks incident to railway operation, and the consensus of the convention was that adequate draft gear specifications cannot be developed as a result of laboratory tests alone. No action was taken by the Mechanical division looking toward formal road tests of draft gears at this time, but the members of the committee, headed by Chairman R. L. Kleine, assistant chief of motive power of the Pennsylvania, have draft gears under observation on their respective roads, and propose to hold joint conferences with the manufacturers during the coming year in an effort to make such modifications as may be necessary in the tentative draft gear specifications set up in the appendix to the committee report.

Draft gear manufacturers have developed highly effective gears within the space and price limitations set up by present railroad practice, and the utilization of the extensive practical experience of the manufacturers, as well as that of the committee members, will be most helpful in the further study of the draft gear problem.

A Waste of Long Standing

DOES it cost anything to recruit and train men for for even the simpler tasks of maintenance of way work? There is no difference of opinion on this point, for every experienced supervisory officer knows that a road must make an investment in an employee before he reaches the level of normal efficiency. This principle is recognized in the graduated wage scale which is receiving increasing recognition by the roads. Yet in spite of the very evident loss that results from a high labor turnover many roads are now preparing to discharge from a quarter to a half of their present maintenance of way employees, knowing full well that most of them will not be available next spring and that it will be necessary to hire and train a large number of new men just as they did last spring and the spring before.

The magnitude of this turnover is shown by the statistics of the Interstate Commerce Commission, in which the number of maintenance of way employees on an hourly basis ranged from 447,256 in August, 1928, and 423,741 last October to 326,932 in February of this year, a maximum reduction of 120,324 men, or 27 per cent.

The waste from this source—in man power and in expenditures for labor—is so evident and so large that it would appear to challenge attention. It is true that on some roads, as yet relatively limited in number, attention is being directed to this condition and progress is being made in the redistribution of the year's work to the end that there may be more uniform employment throughout the year. On a majority of the roads, however, the practice is still being followed of crowding all work possible into the summer months and then cutting the winter forces to such a low point that the men remaining can do little or nothing, except patrol the track or sweep snow from switches.

This practice remains primarily for two reasons. In the first place, the impression prevails that the average winter temperature in the northern states hovers around the zero mark. Yet this is no more true than would be a similar impression that the normal summer temperature in the same areas approximates 100 degrees in the shade. Both extremes are experienced every year, yet each is unusual and is experienced only at intervals. As a matter of fact, a study of temperatures during a normal winter will show that an average winter day is conducive to work and that, when extremes occur, they create demands on the tracks and structures that make it highly advantageous to have men available to clear platforms, remove ice from about water stations, etc.

The second and equally erroneous impression is that it costs more to do work in the winter than in the summer. This arises from the fact that only the direct charges are considered. It is true that it costs more *per ton* to lay rail in the winter than in the summer. However, if the work is properly organized it is possible to lay this rail with men who are of necessity retained for the emergency winter work which arises at intervals but who would not otherwise be constructively employed between times. By consolidating these forces for such work as laying rail, as opportunity offers, it is possible to get a large amount of work done with little or no *added* expenditure, with the result that a net saving of no small magnitude is effected in the cost of doing this work, considering the year as a whole. Equally important—the peak load of the summer is reduced by that amount.

That this is no idle theory is evidenced by the results that now are being secured on a few roads, noteworthy among which is the Delaware & Hudson. In an address before the Roadmasters' Association last month, H. S. Clarke, engineer maintenance of way, stated that the maximum variation in a force of approximately 2500 men on that road was 60 men during 1928 and 136 during 1929, including in the latter year 70 men who were employed on special construction work. He also stated significantly that the number of track men with less than six months' experience had decreased 65 per cent in the last three years. That this practice is producing real results is shown by the further statement that in the face of an average *increase* of five per cent in rate of pay in 1928 as compared with 1920, the maintenance of way payroll had *decreased* $1,228,467, or 19 per cent, in these eight years. Such a saving challenges at-

tention, especially at this time of year when many roads are planning to make their customary drastic reductions in forces and thereby continue the waste in which it results.

Would Machine Methods Make Cost Accounting Feasible?

IT has been suggested in the proposed report in the railway accounting revision case, *Ex Parte 91*, that "perhaps the use of mechanical aids to accounting may be one answer to the problem," i.e., the problem of setting up a system of cost accounting for the steam railroads. In the absence of any further reference in the report to the extent to which railroads have already availed themselves of machines for accounting purposes, it might be well to point out that the railroads were the pioneer commercial users of tabulating machines. Not only have such machines attained widespread use on the railways, but other machine methods promoting economy and speed in accounting are likewise extensively employed.

Just what additional machines not now in general service on the railways there may be which would bring cost accounting into the realm of feasibility from a standpoint of timeliness and economy, therefore, remains a question. It is one of the points in the report which could profitably, from an educational point of view, be greatly amplified when the report is re-written in final form. It is a matter which the parties at interest might well discuss in their briefs to the end that, if machines exist which can meet the requirements of this situation economically, their existence and application in the premises be made generally known.

September Equipment Activity

JUDGED by the standards set in September, 1928, the month just past was decidedly encouraging for the equipment builders. Chiefly as a result of two large purchases by the New York Central, the number of locomotives ordered totaled 84, as against eight last year. Orders were placed for 4,257 freight cars, which compares more than favorably with the 1,236 reported a year ago, while rail and structural steel orders ran slightly ahead of those listed for the corresponding month last year.

The upward trend in railroad buying is hardly less evident when September is compared with the preceding month of the current year. Passenger car and structural steel orders fell off, but locomotive orders were nearly three times ahead of those for August, freight car orders increased from 2,562 to 4,257, or 66 per cent, and rail orders amounted to 128,000 tons, compared with orders for 30,000 tons during the previous month.

The most encouraging feature of the whole equipment situation, however, is not the excess of September orders over those for August or for the corresponding month of 1928, but the number of inquiries outstanding at the end of the month. As reported in the *Railway Age*, various railroads are inquiring for well over 11,000 freight cars and 35 locomotives, while rail inquiries from two large eastern lines alone call for over half a million tons of steel. With most of these likely to be filled during the early fall, and with some additional inquiries for structural steel and passenger cars also unfilled, the coming months appear likely to be some of the busiest that the equipment trade has enjoyed in recent years.

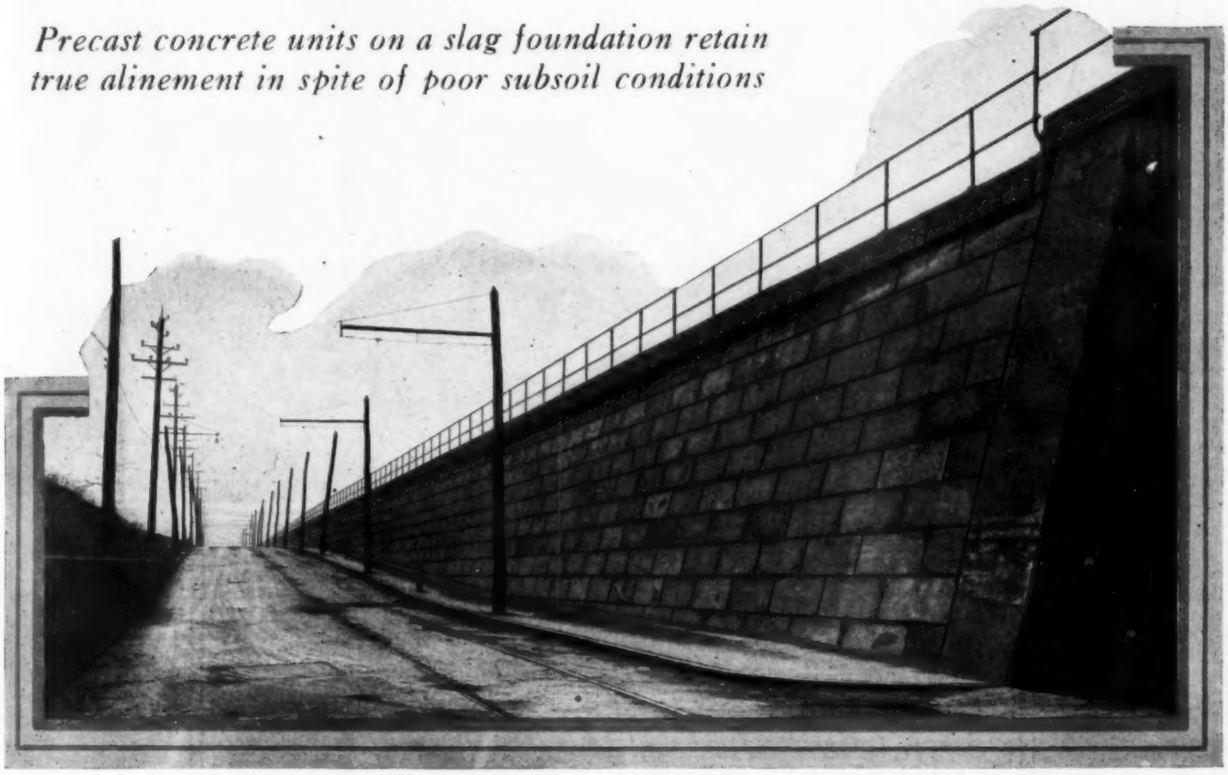
A Budget Committee on a Small Railroad

A BUDGET committee has, somewhere, been characterized as an organization of butchers—a group of men whose function is to attack the well-prepared plans of various departments and hew them away to a scant resemblance of their pristine completeness. In recent months there has been functioning on the Central Vermont a budget committee which differs somewhat from this usual concept. Made up of the officers in charge of all departments, there remain no officers who make budget recommendations who are not themselves members of the budget committee. This obviates the possibility of any feeling, after the committee reaches a decision, that the claims of any one department have been dealt with in cavalier fashion. The head of a department, in submitting his estimates, as a member of the committee not only has the opportunity to defend them before the committee, but also must listen to the presentation and defense of the claims of other departments. The result is that no temptation exists for any department to include in its estimates any items in excess of its actual requirements and, when the budget is made up all departments know why each item authorized was approved and why discarded items were so dealt with.

The budget committee deals with estimates of operating revenues and expenses as well as the capital budget, and experience has shown that the co-operation between departments, built up by the functioning of this committee, has been such that it can safely be entrusted to arrive at wise decisions on managerial problems quite out of the range of purely budgetary matters. The Central Vermont is, of course, a small railroad, and the plan which it is using might possibly not be easily adaptable to a larger property. At the same time, the success which it has had with this experiment merits observation and, possibly, an adaptation of the plan might be workable elsewhere.

Unusual Retaining Wall Proves Success on the P. & L. E.

Precast concrete units on a slag foundation retain true alinement in spite of poor subsoil conditions



The Rankin Retaining Wall as it Appears Today

IN 1919 the Pittsburgh & Lake Erie eliminated a 2,000-ft. double-track steel viaduct on its lines at Rankin, Pa.; a move which attracted considerable interest at the time, and which has been reviewed with much interest during the years since the work was completed. At this point the railroad was confronted with the necessity of renewing the viaduct or constructing a fill to take its place. The latter course was decided upon, but then a problem presented itself in the necessity for retaining walls and the provision of suitable foundations for these walls on a deep deposit of soft and pasty alluvial soil.

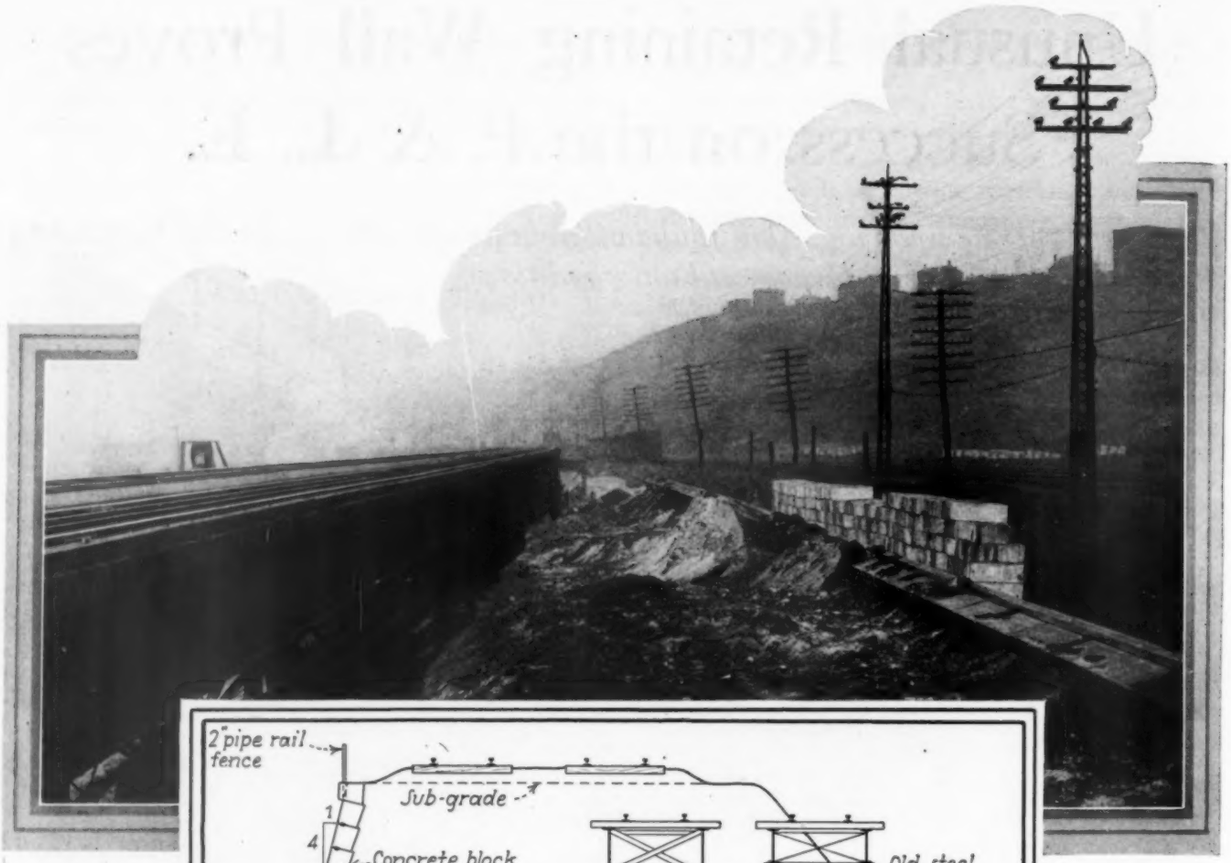
Careful Study Resulted in Use of Premolded Concrete Units

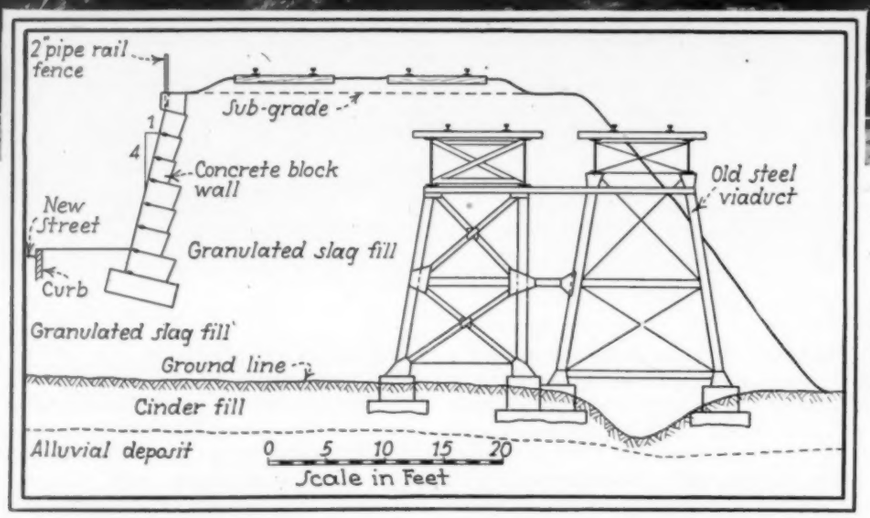
After considerable study, supplemented by a knowledge of the qualities of granulated slag as a filling material, the mass type retaining wall was discarded in favor of a retaining wall of premolded concrete units made to rest on a granulated slag foundation spread over the soft natural soil. At the time of this work the idea of premolded blocks for retaining wall construction was relatively new, and of greater uncertainty was the idea of depending upon a fill of granulated furnace slag to carry the load of the wall over such a poor class of soil as was found at Rankin. The wall, which at its highest point is 24 ft. high, was constructed successfully, however, and although it was watched with some apprehension for a number of years, it still stands with as perfect alinement and as true grade as when it was completed.

Through this type of construction the P. & L. E. avoided the cost of the extensive foundation excavation which would have been necessary with the ordinary type of mass retaining wall; it saved the cost of placing piles and foundation masonry; and it also saved the cost of temporary trestles to assist in carrying traffic over the Rankin viaduct while the work was under way. This latter work, it is felt, would have been necessary if a mass retaining wall had been constructed, because the old stone pedestals under the old steelwork were churning in the alluvial soil under traffic, and would not have stood up with the deep excavations nearby and under the vibration caused by the usual method of placing piles.

In addition to the above mentioned disadvantages of constructing a mass type retaining wall at this point, was the fact that considerable additional trouble and expense would have been encountered at one point in the work where the new alinement adopted made necessary the extension of the retaining wall under the viaduct. Having avoided these disadvantages of a wall poured in place by adopting precast block construction on a slag fill, it is estimated that the P. & L. E. effected a saving of approximately $200,000 on a project originally estimated to cost in the neighborhood of $800,000.

Fundamentally, the success of the work at Rankin is





Above—A section of the Steel Viaduct Partially Covered by the Slag Embankment

Left — A Sketch Showing the Relationship Between the Old Viaduct and the Retained Slag Fill

attributed to the unusual qualities of granulated slag as a foundation and filling material. This material, which is produced by the rapid quenching of hot furnace slag in water, is abundant in the steel mill districts served by the P. & L. E. and has been used quite extensively by that road for embankment and filling work. Soon after this slag is placed in an embankment it hardens, or cements, and will stand, in many cases, for some time with practically vertical side slopes. It has also been observed that very little settlement of this material occurs after it has been put in place, particularly if it is tamped to any extent.

Evidence of this latter fact was made conclusive in the use of granulated slag in the high approaches to the Pittsburgh & Lake Erie's bridge over the Ohio river at Beaver, Pa. These approaches, which were constructed in 1907 and 1908, are a maximum of 65 ft. high, and in spite of the fact that the bridge approach tracks were ballasted and put in operation soon after the fills were completed, they have not required reballasting, as no appreciable settlement has occurred.

This and other experiences suggested to the P. & L. E. the idea of using granulated slag for a retaining wall foundation, rather than excavating for good bearing soil. Accordingly, from 6 to 10 ft. of slag was spread over the original ground throughout the length of the proposed wall. As it was assumed that there might be a small amount of settlement in any retaining wall built on such a foundation, and possibly a slight warping in its alinement, the idea of a monolithic concrete wall was given up and, in its place it was decided to construct the wall of precast blocks laid up dry and interlocked with brick dowels. This type of construction, it was thought, would allow such slight movement and settlement as might take place, without causing unsightly cracks in the wall.

Wall Was Carefully Designed

In a careful study made to determine the best size of blocks and the most economical batter for the face of the wall, it was found that granulated slag weighs about 67 lb. per cu. ft., and that it has an angle of re-

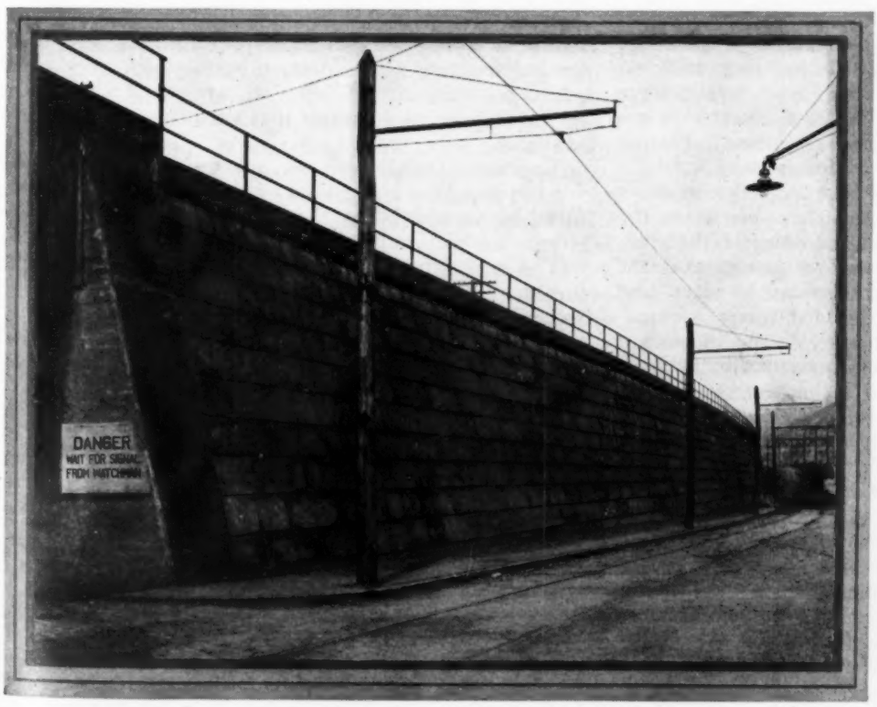
The Wall Units Were Placed by a Locomotive Crane

pose of 1¼ to 1. Taking this into consideration, as well as the conditions requiring that the face of the wall at the top be 9 ft. 9 in. from the center of the nearest track at subgrade, and assuming a live load of 700 lb. per sq. ft. at subgrade, it was found that with a ½ to 1 slope, a 2-ft. concrete block wall could be used to any height up to 24 ft. without the resultant forces on the wall falling outside the middle third of the base. As there was insufficient width at all of the cross sections of the work, however, to allow a batter of ½ to 1, certain sections of the wall were designed on the basis of a batter of ¼ to 1, thus requiring wider blocks at the base of the wall.

As a result of the studies made, different sections of walls were designed for heights of 6 ft., 10 ft., 15 ft., 20 ft. and 24 ft., and for these various sections three sizes of blocks were used, all 6 ft. long and 2 ft. deep, but with top faces measuring 2 ft., 3 ft. and 4 ft. wide respectively.

In all of the blocks, the bed faces were made three inches less in width than the top faces, so as to provide a step-like arrangement at each joint in the rear face of the wall and thereby increase the stability of the wall by allowing a certain amount of the weight of the fill to press down on the various courses of blocks.

A total of 6,316 blocks were used in the wall, all of which were cast at the source of the sand and gravel used in them, over 20 miles from Rankin. The only exception to this was in the case where a number of half blocks were cast in place to effect a neat closure with the side walls at a private undercrossing. All of the blocks were provided with beveled edges on their front faces to prevent disfigurement which might have occurred otherwise in handling, and were cast with a lifting stirrup, placed at the center of gravity, so that they could be readily loaded into cars and later lifted into place in the retaining wall. All of the blocks were also formed with grooves in their tops and beds, these being shaped to fit snugly over common bricks, one of which was placed under each end of each block as it was set in place in the wall to act as a dowel. This construction provided the desired security against sliding of one course of blocks on another, gave the necessary flexibility, and facilitated the work of placing the blocks to proper face and alignment in the wall



No Settlement is Noticeable in Even the Highest Sections of the Wall

In carrying out the construction of the wall, great care was exercised in placing the footing course of blocks as the alinement and slope of these blocks determined the alinement and slope of the finished wall. It was found that the best results were accomplished by first laying a long line of the footing course blocks with precision, and then building up the wall uniformly throughout this length to its full height.

Small Force Carried Out Work

As each course of blocks was set in place, it was immediately backed up by the fill of granulated slag, which was made in practically horizontal layers. All of the blocks were placed by a locomotive crane, located between two gondola cars carrying blocks, and operating on a temporary track along the front of the wall. The filling material back of the wall was, for the most part, put in place by dump cars operating either on the nearest viaduct track, or on a temporary track laid behind the wall and raised as the filling progressed.

Throughout the work an average of 20 footing blocks were laid in a day, while the upper part of the wall was built up at the rate of 70 blocks a day. All of the work of building the wall was done by a force of six men, which included the crane operator, a mason foreman and four laborers. One of the laborers was employed on the gondola cars to hook on the blocks, two of the laborers guided the blocks into place, and the fourth laborer placed the key bricks in the slots and aided in other work as required.

Work Caused No Interference With Traffic

Owing to the realinement of the tracks in this territory, it was possible to put the outside track on the new embankment in service before cutting out service on one of the trestle tracks. Thus, double-track operation was maintained throughout the entire period of construction work. When the nearest trestle track was taken out of service, the girders were removed and filling was continued to the new subgrade elevation. This permitted the laying of the second new track on the slag embankment. When both new tracks were in service, all traces of the old steel viaduct were removed, a large portion of this being done by cutting off projecting members with an acetylene torch.

In order to remove all traces of expected settlement and side movement of the new wall, as seen from the track level, several weeks were allowed after the completion of the retaining wall before putting on the coping course. This course was then cast in place, and given true alinement and surface. Contrary to expectations at the time there was practically no movement of the wall, either vertically or horizontally, prior to placing the coping course, and no movement of the wall whatever has taken place in the years since it was constructed. This is readily evident from the condition of the pipe railing along the top of the wall, which is today in perfect alinement.

Officers of the Pittsburgh & Lake Erie do not feel that this type of wall can always be used to advantage, but they do feel certain that the design adopted proved economical under the conditions presented at Rankin, and that the construction here again points to the merit of granulated slag as filling and foundation material.

The unusual construction at Rankin was designed and carried out under the direct supervision of A. R. Raymer, assistant vice-president and chief engineer of the P. & L. E. F. J. Nannah, engineer of construction, was in charge of the work in the field.

Treasury Officers Meet

THE Twenty-third annual meeting of the Railway Treasury Officers Association was held at the Royal York Hotel, Toronto, Ont., on September 18-20.

The delegates were welcomed by the Mayor on behalf of the city. An address by W. H. Moore, chairman, Advisory Board on Tariff and Taxation of Canada, on "Our Differences", featured the Thursday session. Brief papers were presented by F. H. Hamilton, vice-president, secretary and treasurer, St. Louis-San Francisco, on the history of the association, and by H. P. Conner, assistant treasurer of the Pennsylvania, on modernizing some treasury department operations. This latter paper dealt largely with the use of machines in preparing dividend and interest checks, stock allotment lists, etc.

Reports from standing and special committees indicated substantial accomplishments during the year. The executive committee reported that hearings had been held before the Interstate Commerce Commission as the result of the filing of a petition by the National Industrial Traffic League for a reopening of *Ex Parte No. 73*, which governs the collection of transportation charges and extension of credit to shippers. As yet no decision has been announced by the Commission. The committee on bills of lading presented a revised set of rules for the issuance, conduct and disposition of bills of lading. The association endorsed these rules in principle and urged their adoption by the carriers in an effort to secure uniformity in the treatment of bills of lading.

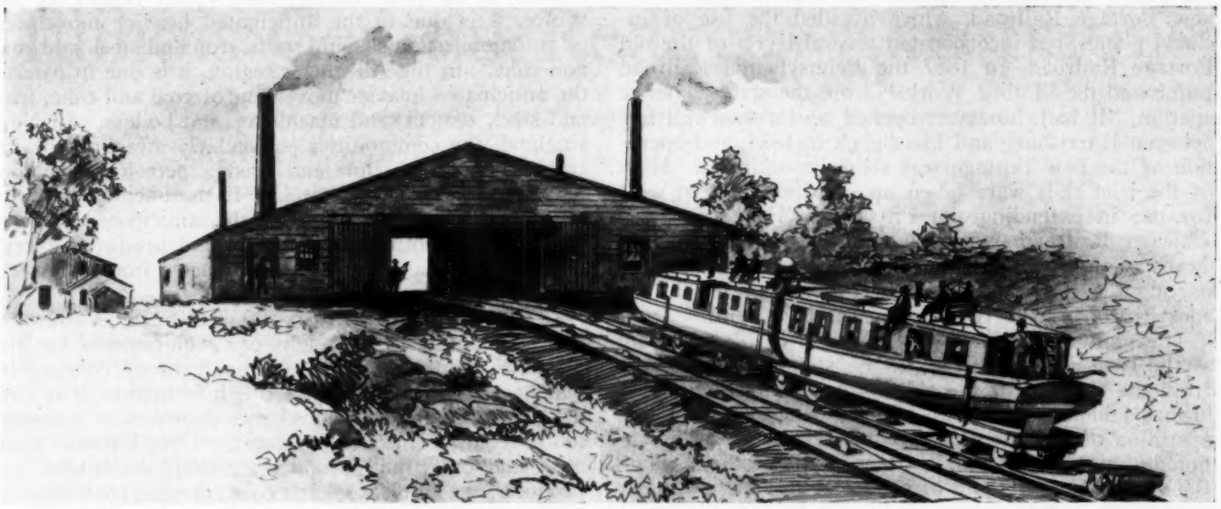
Likewise the committee on uniform shippers order bonds submitted revised forms of bonds to be filed with carriers for delivery or other disposition of order consignments prior to surrender of original bill of lading or of shipment under straight bill of lading without surrender of proper order to deliver. The special committee on diversions and re-consignments has held further conferences with the national diversion and re-consignment committee and some progress has been made toward securing a modification of the tariff regulations which necessitate the filing with carriers of a certificate by the shipper to the effect that the bill of lading is not available.

The annual dinner on the evening of September 19 for the members and guests of the association was featured by an address by the Hon. and Rev. H. J. Cody, Rector of St. Paul's Anglican Cathedral.

The new officers are J. G. Walsh, treasurer, Erie, president; F. J. Buller, treasurer, Canadian National, vice-president; L. W. Cox, secretary and treasurer.

The executive committee is constituted as follows: Messrs. Walsh and Buller, ex-officio; R. N. Harry, assistant general treasurer, New York Central; T. W. Mathews, treasurer, Seaboard Air Line; J. A. Yates, general treasurer, Canadian National; H. P. Conner, assistant treasurer, Pennsylvania; O. M. Longnecker, treasurer, Southern Pacific (Louisiana and Texas); Charlton Messick, treasurer, St. Louis Southwestern; E. S. Locke, treasurer, Louisville & Nashville; P. D. Houston, treasurer, Tennessee Central; Jas. Williams, treasurer, Chicago & Alton.

THE CENTRAL OF GEORGIA, in the 12 months of the cotton year ending July 31, 1929, transported 825,000 bales of cotton without a single instance of financial loss. There were a few instances of overs or shorts but these were quickly straightened out. In the year preceding, 811,000 bales were transported with only one small loss, a single bale missent.



Crossing the Alleghenies in 1840. This Typical View on the Old Portage Railroad Shows a Sectional Canal Boat Being Drawn Up An Inclined Plane. It is Approaching the Headhouse, Where Stationary Engines Were Located.

Old Portage Railroad Commemorated

Construction of combination rail and canal line, the "Mother of the Pennsylvania," started 100 years ago

A MONUMENT was unveiled on Tuesday of this week on the William Penn Highway, two miles east of Cresson, Pa., and 15 miles west of Altoona, to commemorate the opening of the Old Portage Railroad on March 18, 1834. Contracts were let for this work 100 years ago, in 1829.

The unveiling ceremonies were presided over by William Elmer, chairman of the commission appointed by the governor of Pennsylvania to arrange for the monument and celebration. Mr. Elmer, a special engineer of the Pennsylvania Railroad, originated the idea and pushed it aggressively to its fulfillment. Hon. Plymouth W. Snyder, ex-president of the Blair County Historical Society, outlined the history of the Old Portage Railroad, and Charles M. Schwab, proud of being a native of Blair county, told in his happy way of the experiences of his father on the Old Portage.

A. J. County, vice-president of the Pennsylvania Railroad, made the presentation address, and Governor John S. Fisher, the address of acceptance. The Governor referred to the Old Portage as the "Mother of the Pennsylvania Railroad" and indicated the pride which she would have had, had she known her lusty descendant of today. He commented, also, on the marked success of private ownership, as exemplified by the Pennsylvania Railroad, as compared to state ownership of the earlier system.

The Erie Canal in New York State was opened in 1825, and this, with the activities of the citizens of Baltimore in projecting the Baltimore & Ohio Railroad, threatened the trade between Philadelphia and Pittsburgh, which had been carried on, first by pack trains and later by Conestoga wagons. Private capital not being available the state established the "Main Line of Public Works."

The first link of the "Public Works" was a railroad from Philadelphia to Columbia; then came a canal from Columbia to Hollidaysburg; then the Old Portage Railroad over the mountain crest to Johnstown, a distance of 37 miles; and finally, another canal from Johnstown to Pittsburgh. At first horses furnished the motive power for the rail section, but it was not long before they were replaced by locomotives. During the early period, also, the freight and passengers were transferred from railway cars to canal boats, and from canal boats to cars. Later, canal boats were built of a special design, so that they could be broken up into sections and be mounted on trucks for movement over the rails.

The Old Portage conquered the mountain barrier by a series of five levels and five inclined planes on each side of the summit, which was 2,326 ft. above sea level. The planes varied in length from 1,480 to 3,116 ft., and the elevation overcome ranged from 130 ft. to 370 ft. The longest level was slightly more than 13 miles.

The trucks were drawn up and lowered down the inclined planes by hempen cables, power being supplied by a stationary engine at the head of each plane. These ropes were 7 in. in circumference and ranged in length from 3,616 ft. to 6,662 ft. On the levels, the trucks were drawn at first by horses, but later steam locomotives were substituted. At one period it was necessary to change power 33 times in moving a sectional boat over the Portage. Twelve stationary engines, 12 different teams of horses and 9 locomotives were used.

In 1855 the state completed the construction of the new Portage Railroad, which avoided the use of inclined planes, but incorporated several levels of the old Portage Railroad. In 1857 the Pennsylvania Railroad purchased the "Public Works" from the state at public auction. It had, however, opened up its own rail line between Harrisburg and Pittsburgh in 1854, and operation of the new Portage was soon discontinued. Most of the iron rails were taken up in 1858 and sent west for use in extending the Pittsburgh, Fort Wayne & Chicago Railroad from Plymouth, Ind., to Chicago. Many of the stone blocks which had been used for supporting the rails were sent to Altoona for use in the construction of the repair shops at that point.

The monument which was unveiled is 12 ft. square at the base and is built from the stone sleepers taken from the roadbed of the old Portage Railroad. It has bronze tablets on each of its four sides picturing the operation of the Old Portage and describing its operation and history. It stands a few feet from the William Penn Highway on a plot of ground which was formerly part of the right-of-way of the old Portage Railroad, at the foot of plane No. 6.

Increased Carloading Expected

WASHINGTON, D. C.

CARLOAD shipments of the 29 principal commodities in the fourth quarter of this year, (October, November and December) are estimated at approximately 9,134,023 cars, an increase of 209,391 cars above the corresponding period in 1928 or 2.3 per cent. The Shippers' Regional Advisory Boards furnish these estimates quarterly to the Car Service Division of the American Railway Association so that the railways may have a guide as to the service they are to be called upon to perform in a given quarterly period.

Of the 13 Shippers' Regional Advisory Boards, 10 anticipate an increase in their respective districts in transportation requirements for the fourth quarter of the year compared with the same period last year, while three expect a decrease. The 10 boards which estimate an increase are the Atlantic States, Allegheny, Ohio Valley, Pacific Coast, Southeastern, Middle Western, Central Western, Southwestern, Trans-Missouri-Kansas and the New England Boards. The only boards estimating a decrease are the Great Lakes, Pacific Northwest and Northwestern boards.

The estimate by each Shippers' Regional Advisory Board as to freight loadings by cars for the 29 principal commodities in the fourth quarter compared with the corresponding period in 1928 and the percentage of increase or decrease follows:

Board	Actual 1928	Estimated 1929	Per Cent of Increase or Decrease
Central Western	362,758	365,339	.7 Increase
Pacific Coast	361,920	377,245	4.2 Increase
Pacific Northwest	317,298	310,581	2.1 Decrease
Great Lakes	644,032	633,851	1.6 Decrease
Ohio Valley	1,127,107	1,207,035	7.1 Increase
Mid-West	1,308,725	1,325,727	1.3 Increase
Northwest	520,651	486,360	6.6 Decrease
Trans-Mo.-Kansas	461,779	472,233	2.3 Increase
Southeast	939,648	957,637	1.9 Increase
Southwest	672,834	683,672	1.6 Increase
New England	176,670	186,565	5.6 Increase
Atlantic States	935,618	966,223	3.3 Increase
Allegheny	1,095,592	1,161,555	6.0 Increase
Total	8,924,632	9,134,023	2.3 Increase

The large comparative increases in freight car requirements over last year in the Ohio Valley, Allegheny, New England and Pacific Coast regions are due to a number of factors. In the Ohio Valley region for instance, it is due to the anticipated heavier movement of automobiles, trucks and parts, iron and steel, and coal and coke. In the Allegheny region, it is due in part to the anticipated heavier movement of coal and coke, iron and steel, cement, and machinery and boilers. In New England, the commodities particularly affecting the increase are cement, lime and plaster, petroleum and petroleum products and potatoes. In the Pacific Coast, the estimated increase is due to the anticipated heavier movement of cotton; cotton seed and products, except oil; petroleum and petroleum products; iron and steel; and automobiles, trucks and parts.

In submitting reports to the Car Service Division, each board estimated freight car requirements for the principal industries found in the territory covered by that board. On the basis of this information, it is estimated that of the 29 commodities increases in transportation requirements will develop for 17 as follows: flour, meal and other mill products; cotton; cottonseed and products, except oil; coal and coke; ore and concentrates; petroleum and petroleum products; sugar, syrup, and molasses; iron and steel; machinery and boilers; cement; brick and clay products; lime and plaster; agricultural implements and vehicles other than automobiles; automobiles, trucks and parts; paper, paperboard and prepared roofing; chemicals and explosives; and canned goods.

Commodities for which a decrease is estimated are: grain; hay, straw and alfalfa; citrus fruits; other fresh fruits; potatoes; other fresh vegetables; live stock; poultry and dairy products; gravel, sand and stone; salt; lumber and forest products; and fertilizers of all kinds.

The estimate as transportation requirements for various commodities follows:

Commodity	Carloadings Actual 1928	Carloadings Estimated 1929	Estimated per cent Inc. %	Estimated per cent Dec. %
Grain, All	492,802	424,725		13.8
Flour, Meal & Other Mill Products	245,791	256,780	4.5	
Hay, Straw and Alfalfa	84,122	83,911		.3
Cotton	181,067	188,685	4.2	
Cotton Seed & Products, Except Oil	108,238	121,815	12.5	
Citrus Fruits	32,163	30,485		5.2
Other Fresh Fruits	132,378	118,400		10.6
Potatoes	71,106	65,522		7.9
Other Fresh Vegetables	56,730	55,275		2.6
Live Stock	434,730	415,729		4.4
Poultry and Dairy Products	35,539	34,901		1.8
Coal and Coke	2,902,992	3,079,509	6.1	
Ore and Concentrates	457,741	472,053	3.1	
Gravel, Sand and Stone	754,907	744,402		1.4
Salt	30,327	29,528		2.6
Lumber and Forest Products	877,358	866,869		1.2
Petroleum and Petroleum Products	553,011	580,623	5.0	
Sugar, Syrup and Molasses	56,613	58,516	3.4	
Iron and Steel	496,038	522,943	5.4	
Machinery and Boilers	51,485	54,391	5.6	
Cement	187,607	196,352	4.7	
Brick and Clay Products	154,784	160,265	3.5	
Lime and Plaster	53,277	54,214	1.8	
Agric. Implements & Vehicles, other than Automobiles	18,885	19,592	3.7	
Automobiles, Trucks and Parts	195,669	227,593	16.3	
Fertilizers, All Kinds	67,477	65,707		2.6
Paper, Paperboard and Prepared Roofing	103,707	110,907	6.9	
Chemicals and Explosives	30,370	32,272	6.3	
Canned Goods—All Canned Food Products (includes Catsup, Jams, Jellies, Olives, Pickles, Preserves, etc.)	57,718	62,059	7.5	
Total All Commodities Listed	8,924,632	9,134,023	2.3	

AS A RESULT of successful experiments in receiving radio broadcasts aboard moving trains, the French State Railway plans to equip three of its principal Paris-Havre expresses with radio sets. A headpiece will be provided for each first and second class passenger, and a charge varying between 10 and 20 francs ($0.40 and $0.80) will be made for use of the service. Programs will be received from Radio Paris, the Eiffel Tower, the Paris Bourse, Daventry (England), and other European stations. Their reception will be in charge of a radio operator, located in a special cabin on each train.

Illinois Central Reduces Exceptions

Improved freight handling and employee education contribute to unusual accomplishment

By C. G. Richmond
Superintendent of Stations, Illinois Central

THE total number of less-than-carload exceptions charged against loading stations on the Illinois Central during 1928 was 40,785, as compared with 50,958 in 1927, a decrease of 10,773, or 19.9 per cent. Since the outbound less-than-carload tonnage showed a decrease of only 4.1 per cent between 1927 and 1928, a marked increase in efficiency is indicated by the comparison.

The classification of the 40,785 less-than-carload exceptions charged against the large and semi-large stations on their outbound loading during 1928 was as follows:

		Decrease	Per Cent
Shorts	6,335	1,741	21.5
Bad Orders	19,309	4,553	19.0
Overs	10,080	3,073	23.3
Astrays	4,508	491	9.8
Pilferages	553	315	36.2

The figures show that 72 per cent of the exceptions received were chargeable to bad orders and overs. A further analysis shows that 47.3 per cent were chargeable to bad orders and 24.7 per cent were chargeable to overs.

The excessive number of overs as compared with astrays indicates a much greater efficiency on our platforms by our loading forces in loading freight into the proper cars than by our office organizations in the billing and jacketing of waybills, there being 10,080 shipments at correct destinations without waybills and only 4,508 shipments at erroneous destinations.

Carload exceptions received on shipments loaded on the system decreased from 1,450 in 1927 to 1,104 in 1928, a decrease of 346, or 23.8 per cent.

It is interesting to note the remarkably increased efficiency in the handling of both carload and less-than-carload shipments in 1928 as compared with 1920, the year the efficiency record plan was established. In 1920 there were 141,025 exceptions received on the handling of less-than-carload freight, as compared with 40,785 in 1928, a decrease of 100,240, or 71 per cent. The exceptions on carload shipments loaded on our rails decreased from 4,458 in 1920 to 1,104 in 1928, a decline of 3,354, or 75.2 per cent.

The Efficiency Plan

Efficiency records, based on the number of exceptions charged against outbound tonnage loaded, are maintained against 55 stations, 8 of which are classified as "large stations" and 47 as "semi-large stations."

Of the eight large stations, Jackson, Miss., ranked first for 1928, handling 173 tons per exception, and Helena, Ark., ranked first among the semi-large stations, handling 2,288 tons per exception, this station holding the record for not having a single exception charged against outboard loading during 1928. Clarksdale and Greenwood, Miss., also made exceptionally good records, handling 1,192 and 946 tons per exception respectively.

The following stations of the "semi-large" class handled 300 tons per exception or better: Cleveland, Miss., Yazoo City, Greenville, Corinth and Jackson, Tenn., while Gulfport, Miss., Hattiesburg, McComb, Dyersburg, Tenn., and La Salle, Ill., handled between 200 and 300 tons per car exception. Thirteen of the semi-large stations handled between 100 and 200 tons per exception, the remaining 21 stations handling fewer than 100 tons each per exception.

C. G. Richmond

Of the 55 stations, against which efficiency records are maintained, all but 3 showed markedly increased efficiency in 1928 as compared with 1927.

Claim Payments Decrease

Claim payments for 1928 totaled $1,032,260, as compared with $1,065,095 in 1927, a decrease of $32,835, or 3 per cent.

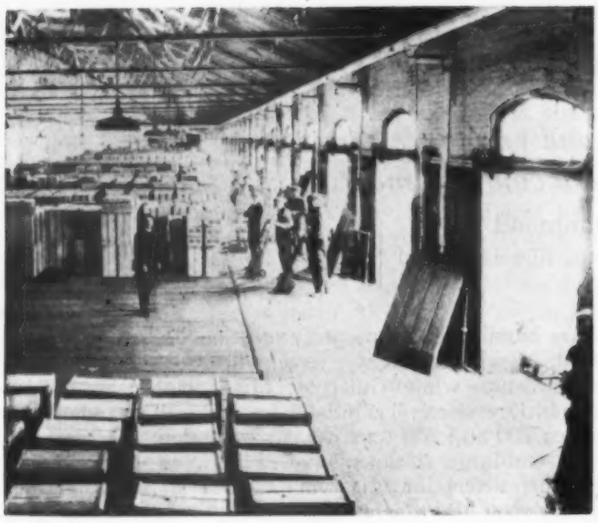
To show the close relationship between exceptions and claim payments, it is interesting to note that claim payments in 1920 totalled $2,408,216, as compared with $1,032,260 in 1928, a decrease of $1,375,956, or 57.1 per cent; while as previously stated, the total exceptions charged in 1920 amounted to 141,025, as compared with 40,785 in 1928, a decrease of 71 per cent. The percentage of claim payments to revenue was reduced from 2.00 in 1920 to 0.72 in 1928, the latter being the lowest percentage reached in the last ten years.

A favorable feature in connection with future claim payments is the fact that the amount of claim presentations decreased more than half a million dollars in 1928, which will be reflected in the 1929 figures. The first two months of 1929 show a decrease of $28,078.

The reduction of exceptions has resulted in a material decrease in the number of claims paid for the loss of an entire package, each year of the last nine showing a reduction. In 1920 there were 11,865 claims paid for the loss of an entire package, as compared with 1,343 in 1928, a reduction of 10,522, or 88 per cent. Claim payments for the loss of an entire package were reduced from $394,701 in 1920 to $54,723 in 1928, a decrease of $339,978, or 86.1 per cent. The number of claims paid for the loss of an entire package in 1928 totaled 1,343, as compared with 1,500 in 1927, a reduction of 157, or 10.4 per cent. This decrease is continuing in 1929. The lost package claims for the first two months show a reduction of 133, or 41.4 per cent, as compared with the same period last year.

The reduction of exceptions depends largely on the individual interest taken by each employee having to do with the handling of less-than-carload or carload shipments.

There are many small and intricate details in connection with the handling of less-than-carload freight, and when consideration is given to the fact that at least 25 employees are directly concerned with the handling of each less-than-carload shipment that moves over a railroad, and that many more are



One of the Illinois Central's Freighthouses

indirectly involved, either in a supervisory capacity or otherwise, it is very gratifying to note the high efficiency records many of our stations are making.

The prevention of exceptions and loss and damage to freight, either carload or less-than-carload, requires as much interest from each employee as though the goods he handled were his personal property. If this rule were followed, exceptions and freight claims would show much greater reductions, the company's revenues and reputation for service would be better safeguarded, and our patrons would be entirely satisfied with our service.

Close Co-operation

The foregoing records have been made by close co-operation between the superintendent of the stations and transfers department, the division officers and the station and train employees who handle the freight.

Every exception issued on the Illinois Central is sent to the office of the superintendent of stations and transfers, where it is carefully analyzed by trained employees and a record made against the station responsible, it being the rule to charge the last loading or transfer station handling the freight without exception, with the report.

After the reports have been sorted and charged, they are copied and mailed out daily to the division superintendent or supervising agent, who in turn handles with the agent and his forces for correction. This method not only keeps the division officers posted, but it also permits investigation and correction within a few days after the freight has been handled, rather than a month afterwards, when any investigation would be more or less indefinite.

In addition, the plan enables the station charged with the exception to claim credit, if the investigation should develop erroneous charging by the superintendent of stations and transfers, in which event the charge is eliminated from the record before the report is closed at the end of the month. In order to be fair with the station forces, the monthly records are not closed until the 15th of the succeeding month, which gives the agent 45 days in which to investigate exceptions charged to him before they become a matter of permanent record. Many interesting controversies arise during these investigations, and in some instances it is necessary for the division officers to decide the responsibility for the exceptions as between stations.

In addition to the daily information, a record is also sent to the superintendents at the end of each ten days, showing by division the number of exceptions charged to date, this information being repeated each ten days until the end of the month, in comparative form, showing the figures for the corresponding period during the previous year. This affords each superintendent an opportunity to know before the close of the month whether freight is being handled better than during the previous year, and if the record is not favorable, immediate action can be taken to correct the cause.

Competition Fostered

While the exception reports have been materially reduced, the real efficiency at the station is shown by the number of tons handled per exception, and in order to stimulate interest, a monthly statement is prepared by the superintendent of stations and transfers, ranking the principal stations according to the number of tons handled per exception, the statement classifying eight large stations and 47 semi-large stations.

This statement is sent to the division officers and to each interested agent at the close of the month. It is looked for with much interest, as every agent is anxious to discover what station is making the best record and compare the performance at his own station with the others.

When this efficiency record was started, many stations were handling less than 100 tons per exception. However, during the year 1928, Jackson, Miss., which is included among the large stations, averaged 173 tons per exception, leading the other stations in the same class. Among the semi-large stations, Helena, Ark., went through the entire year without an exception being charged to the station, Clarksdale and Greenwood, Miss., also made exceptional records by handling 1,192 and 946 tons per exception respectively.

A goal of 300 tons per exception has been set and, during the year 1928, 8 of the semi-large stations reached or exceeded this goal, 5 handled between 200 and 300 tons, 13 between 100 and 200 tons and 21 handled less than 100 tons per exception. Renewed effort has been put forth to improve this record during 1929.

Traveling Inspectors Assist Agents

As a means of keeping up the interest and assisting the station forces to reach the goal, the superintendent of stations and transfers assigns one of his traveling inspectors, who is an experienced platform man, to visit the stations having difficulty in making a satisfactory record, lending assistance in locating and correcting any defects in the warehouse operation that may be responsible for exceptions, special attention being given to stations whose record is below 100 tons per exception.

A remarkable record has been made in reducing claims covering the loss of an entire package. In 1920, there were 11,865 claims paid for such losses, while in 1928 only 1,343 such claims were paid, showing a reduction of 10,522, of 88 per cent. This was accomplished by the loading station properly checking the freight and loading it in the proper car and by correct checking and obtaining receipts at the destination. In addition to this improvement on the part of the station forces, there is in effect a system whereby the freight claim agent does not pay such claims until a final investigation of the shortage has been made by the division supervising agent and payment approved by him. Claims for shortages at the four larger stations, Chicago, East St. Louis, Memphis and New Orleans are not paid until they have been investigated by the superintendent of stations and transfers.

C. V. Receivership to End

Great strides in improving efficiency augur well for future—
Modern power an important factor

THE great flood which devastated Vermont and inflicted such damage on the Central Vermont that it was forced into receivership occurred in November, 1927. A full six months were required to restore the property to normal operation and abnormal conditions persisted even further into 1928. By the beginning of 1929, however, operations had been almost completely normalized.

The receivership is drawing to a close. The property was sold at auction on July 29 to the successor company, the Central Vermont Railway, Inc., virtually all the stock of which is owned by the Canadian National.

A comparison of the progress of the railroad in recent months with a similar period before the 1927 catastrophe may, therefore, be apropos as indicating the trend of conditions which the new company will have to face. For purposes of such comparison, operating results for the first six months of 1929, the latest such period since the flood for which figures are available, may be contrasted with those of the first six months of 1927, the last comparable period prior to the disaster.

Revenues and expenses for these two periods are shown in Table I. It will be seen that there was a slight decrease—0.4 per cent—in operating revenues in the 1929 period, compared with that of 1927. On the other hand, the decrease in operating expenses is much more striking. Maintenance of way expenses showed a reduction of 8.9 per cent; maintenance of equipment expenses, 13.8 per cent; and transportation expenses, 8.7 per cent. The maintenance of way ratio was reduced 8.6 per cent; the maintenance of equipment ratio, 13.4 per cent; and the transportation ratio, 8.2 per cent. As a result of this improvement, in the face of a decline in gross earnings, net railway operating income for the first six months of 1929 was 116.1 per cent greater than in the first six months of 1927.

Table I—Revenues and Expenses—First Six Months

	1929	1927	Inc. or Dec. Per Cent
Freight Revenue	$3,291,357	$3,305,895	— 0.4
Passenger Revenue	580,660	607,198	— 4.4
Total Operating Revenue	4,309,701	4,328,370	— 0.4
Maintenance of Way Expenses	793,630	871,554	— 8.9
Maintenance of Equipment Expenses	582,618	675,505	—13.8
Transportation Expenses	1,745,678	1,911,558	— 8.7
Total Operating Expenses	3,391,817	3,724,372	— 8.9
M. of W. Ratio to Oper. Rev., %	18.41	20.14	— 8.6
M. of E. Ratio to Oper. Rev., %	13.52	15.61	—13.4
Trans. Ratio to Oper. Rev., %	40.51	44.15	— 8.2
Operating Ratio, %	78.70	86.05	— 8.5
Net Railway Operating Income	$814,217	$376,750	+116.1

Comparative Freight Service Statistics

Comparative freight service operating statistics are shown in Table II. In general, they show the same striking degree of improvement as set out in Table I. Total traffic, as measured in net ton-miles, showed a reduction of a fraction of one per cent. Gross ton-miles (influenced probably by an increase of 7.1 per cent in the ratio of loaded to total car-miles) declined

Selling the C. V. at Auction, St. Albans, Vt., July 29

4.1 per cent. Freight train-miles declined 19.3 per cent, locomotive-miles 19.8 per cent and train-hours 19.7 per cent. Net ton-miles per car-day increased 19.5 per cent; freight cars per train, 15.4 per cent; net tons per train, 23 per cent. Gross ton-miles per train-hour increased 19.4 per cent, while net ton-miles per train-hour averaged 23.5 per cent greater than in the first six months of 1927.

New Power Brings Improvement

Among the reasons for this truly remarkable improvement in performance the change in the road's motive power condition, brought about by the acquisition of modern locomotives and the retirement of older power, deserves primary attention. Comparing the end of July, 1929, with July, 1927, we find that the average tractive power of road freight locomotives had increased to 59,971 lb. or 40.6 per cent, that of switching locomotives to 40,179 lb., or 15.4 per cent, and of passenger locomotives to 29,310 lb., or 8.9 per cent. The total number of locomotives in service, meantime, de-

Table II—Comparison of Selected Freight Operating Statistics—First Six Months

	1929	1927	Per cent of change Inc.	Dec.
Mileage operated	413	433		4.6
Gross ton-miles (thousands)	623,055	649,889		4.1
Net ton-miles (thousands)	255,757	257,827		0.8
Freight train-miles (thousands)	409	507		19.3
Freight locomotive-miles (thousands)	446	556		19.8
Freight car-miles (thousands)	17,203	18,321		6.1
Freight train-hours	34,621	43,106		19.7
Car-miles per day	44.2	39.3	12.5	
Net tons per loaded car	19.4	19.5		0.5
Per cent loaded to total car-miles	77.3	72.2	7.1	
Net ton-miles per car-day	661	553	19.5	
Freight cars per train	42.8	37.1	15.4	
Gross tons per train	1,524	1,283	18.8	
Net tons per train	626	509	23.0	
Train speed, miles per train-hour	11.8	11.8	...	...
Gross ton-miles per train-hour	17,996	15,077	19.4	
Net ton-miles per train-hour	7,387	5,981	23.5	
Lb. coal per 1,000 gross ton-miles	115	122		5.7
Loco.-miles per loco.-day	70.4	71.6		1.7
Per cent freight locos. unserviceable	15.1	24.0		37.1
Per cent freight cars unserviceable	3.3	2.8	17.8	

creased from 92 in July, 1927, to 68 in July, 1929. The logical result to be expected of such a change would be heavier train loading and reduced maintenance costs —and that is what has occurred.

Comparing July, 1929, with July, 1927, we find that net ton-miles per mile of road per day increased 8.6 per cent, gross ton-miles per mile of road per day decreased 1.3 per cent and empty car-miles showed the astonishing diminution of 22.2 per cent. Enginehouse expenses decreased 25.5 per cent, wage cost of engine crews 13.6 per cent, wage cost of train crews 10.1 per cent and locomotive fuel expense 19.3 per cent.

A large part of the improvement, undoubtedly, is due to the acquisition of modern power. On the other hand, this does not explain the great reduction in empty car mileage. The improvement effected in this respect is attributable to more careful solicitation of freight—that is, the concentration of sales effort and expense, not upon gross volume, but upon that business which experience had shown could be profitably handled. By such efforts empty car mileage was reduced and remunerative traffic stimulated. The purchase by the company of 500 automobile cars assisted it in its solicitation of this class of business.

Operating Practices Improved

Operating performance has been improved by lengthening runs. Most train crews, except firemen, now run through between White River Jct. and New London, Conn., covering what formerly was two freight districts. In general Consolidation type locomotives are used from White River Jct. to New London, while the new 2-10-4's are assigned to the White River Jct.-St. Albans district where tonnage is heavier. The newer locomotives, in general, can handle from 50 to 70 per cent more tonnage (depending upon whether or not they are booster-equipped) than the Consolidation type locomotives which they have, on the St. Albans-White River district, largely supplanted.

Aside from the specific credit which may be assigned to the newer locomotives and the traffic solicitation policy of the management, there remain many favorable changes which cannot thus be accounted for. Probably the officers of the company, faced as they were with one of the most discouraging physical catastrophes which a railroad has suffered, were brought to a keen realization of their responsibilities in rehabilitating their property, and have exerted themselves to the utmost to attain this end.

One important innovation in management which has been made and which undoubtedly has assisted in bringing close co-operation in promotive efficiency among the various departments has been the formation and activity of the budget committee. This committee is made up of the following officers: The two division superintendents, the comptroller, the chief engineer, the general freight and passenger agent, the mechanical superintendent and the purchasing agent. The committee has a regularly assigned secretary and meets twice monthly. Not only does it prepare the budget of capital expenditures but operating revenues and expenses are also estimated and budgeted—both annually and from month to month.

This committee has functioned in such a way that interdepartmental problems are thoroughly discussed and understood, and the relative importance of the claims of various departments to available funds is thoroughly appreciated. The committee reports to the receivers and it will be continued, reporting to the vice-president, under the new company.

Co-operative Advertising for Passenger Business*

By D. M. Bowman

Passenger Traffic Manager, Cleveland, Cincinnati, Chicago & St. Louis

ARE the railroads as a whole advertising? Are we putting our message over to the people? Are we getting the most for our money in present day advertising? Are we treated fairly by the newspapers, that is, by comparison?

We have all noticed the special editions of the large daily papers on certain days of the week devoting space to the automobile industry, to highway motor coach service, and to radio, in fact a radio section of the paper is very common, particularly in the Sunday editions.

Do these concerns spend more money with the newspapers than the railroads as a whole? Are we not just as big individually and collectively as the concerns that are doing what is termed "national advertising"? We have transportation to sell. Should it not be advertised collectively by all steam carriers?

From time to time we have noticed national advertising by many trade organizations. The Society of American Florists and Horticulturists have combined their efforts to educate the public to purchase flowers for holidays, Mother's Day, etc. They have a national slogan, "Say it with Flowers." It is my understanding that this combined effort has produced wonderful results. There are numerous other organizations which carry national joint advertising.

For several years the Chicago-St. Louis lines have combined and jointly advertised their excursion fares. Recently the lines interested in through service between Chicago and Florida arranged for joint advertising of one-way reduced fares.

It is my opinion that the national organizations referred to are satisfied with the results obtained. The Chicago-St. Louis lines have expressed themselves as highly pleased with the results of their joint advertising and I believe the experiment in Chicago-Florida advertising will at least demonstrate that it is possible to reduce the expense to the individual lines.

Would it not be well for the steam carriers throughout the United States to give careful consideration to the question of joint publicity, telling the public about our good points, our ability to serve, the general improvement in equipment and schedules, and our wonderful on-time record?

The present generation is quite familiar with automotive transportation and, to a very large extent looks upon the automobile and the highway motor coach as the synonym for the word "travel." This mode of transportation is before them constantly—on the streets, highways, everywhere—but they are not quite so familiar with steam transportation.

It seems to me there is a wonderful opportunity to bring home to this younger generation, and the traveling public as a whole, our story of efficient service. I have in mind that a national campaign, urging the public to visit their old homes or friends during the holiday seasons, such as Christmas time, New Year's Day, Washington's Birthday, Lincoln's Birthday, Decoration Day, Fourth of July, Labor Day, Thanksgiving Day, would produce results far beyond our expectations.

* Presented at the convention of the American Association of Passenger Traffic Officers, Winnipeg, Man., September 16-17.

Traveling Engineers Conclude Chicago Meeting

Reports on train heating and fuel—Address by F. P. Roesch—Election of officers

AT the closing sessions of the Traveling Engineers' Association convention held at the Hotel Sherman, Chicago, September 24 to 27, inclusive, as reported in last week's issue, committee reports were presented on the general subjects of train heating and fuel conservation; the development of locomotive stokers was outlined in a paper by F. P. Roesch, Standard Stoker Company, Inc., Chicago; and officers of the association were elected for the coming year.

According to the report of Secretary W. O. Thompson, the present membership of the Traveling Engineers' Association is 1,600. The total registration of members and guests at the Chicago convention was 1,400, of which 508 were railroad men and 481 representatives of supply companies. One of the most instructive features in connection with the convention was the exhibition of railway equipment and supplies shown by 113 companies, and it may be said for the traveling engineers, both individually and collectively, that, judging by the amount of time spent at the exhibits and the interest displayed, it was one of exceptional value.

Election of Officers

In accordance with the usual custom of the Traveling Engineers' Association, the officers for the year 1928-1929 were advanced. The new officers for the coming year are: President, Ralph Hammond, road foreman of engines, New York, New Haven & Hartford, Providence, R. I.; first vice-president, R. A. Phair, road foreman of engines, Canadian National, Montreal, Que.; second vice-president, H. B. Kelley, general road foreman of engines, Pittsburgh & Lake Erie, McKees Rocks, Pa.; third vice-president, J. M. Nicholson, fuel conservation engineer, Atchison, Topeka & Santa Fe, Topeka, Kan.; fourth vice-president, A. T. Pfeiffer, road foreman of engines, New York Central, Syracuse, N. Y.; fifth vice president, D. L. Forsythe, general road foreman of equipment, St. Louis-San Francisco, Springfield, Mo.; treasurer, David Meadows, Michigan Central, St. Thomas, Ont.; secretary, W. O. Thompson, equipment assistant, New York Central, Buffalo, N. Y. G. A. Haslett, general road foreman of engines, Seaboard Air Line, Tampa, Fla., and J. J. Kane, road foreman of engines, Lehigh Valley, Sayre, Pa., were elected members of the executive committee, the other members of which include F. P. Roesch, sales manager, Standard Stoker Company, Inc., Chicago; B. J. Feeney, superintendent of fuel conservation, Illinois Central, Chicago; E. R. Boa, road foreman of engines, New York Central, East Buffalo, N. Y.; G. A. Kell, safety engineer, Canadian National, Toronto, Ont.; J. C. Simino, traveling engineer, Southern Pacific, Lafayette, La.; M. A. Daly, general fuel supervisor, Northern Pacific, St. Paul, Minn.; G. C. Jones, master mechanic, Atlantic Coast Line, Jacksonville, Fla.; M. G. Macias, assistant general superintendent, National Lines of Mexico, Mexico City, Mex.; C. I. Evans, chief fuel supervisor, Missouri-Kansas-Texas, Parsons, Kan.; A. White, general road foreman of engines, Southern, Charlotte, N. C.; W. L. Robinson, superintendent of fuel and locomotive performance, Baltimore & Ohio, Baltimore, Md.; D. I. Bergin, assistant general road foreman engines and fuel supervisor, Wabash, Decatur, Ill.; J. N. Clark, chief fuel supervisor, Southern Pacific, San Francisco, Cal.; J. P. Stewart, general supervisor of air brakes, Missouri Pacific, St. Louis, Mo.; J. B. Hurley, general road foreman engines and fuel supervisor, Wabash, Decatur, Ill.; J. D. Clark, fuel supervisor, Chesapeake & Ohio, Richmond, Va.

Report on Passenger Car Heating

In order to secure a better utilization of steam furnished by the locomotive boilers for passenger-car heating and at the same time keep them properly ventilated, first we must have an efficient heating system; second, we must not permit the heat so generated to be wasted by excessive ventilation or by placing an unreasonable load on the locomotive boiler by taxing the heating system beyond its capacity; that is, we should not expect the heating system to accomplish the impossible. One of the impossibilities referred to is the endeavor to heat more cars in really cold weather than we can force the steam through from the locomotive. Another impossibility is trying to heat cars with insufficient radiating surface in the heating coils, or trying to heat cars without first protecting their interiors against drafts of cold air from windows not double-sashed or windows and doors not fitted with suitable weather-strips.

First, let us consider the locomotive steam-heat equipment. A 2-in. steam line from the turret to the rear of the tender is essential; also, a stop valve having a full 2-in. opening or the same capacity as that of a 2-in. pipe. Then, a steam-heat reducing valve of the same capacity, that is, with a 2-in. inlet and outlet, and the valve proper to have the same capacity as the pipe it is to supply. To insure efficiency at this point we

must arrange the piping so as to eliminate every unnecessary bend or angle. Where bends in the pipe are unavoidable, use a gradual bend if possible. Avoid a right angle ell if possible.

Between the locomotive and tender there should be a 2-in. metal steam conduit, having flexible joints and permitting a straight flow of steam without sharp turns and preferably without enlargements in the steam channel, as such enlargements produce eddies in the steam current. These retard the free flow of the steam. All parts of this steam line should be thoroughly insulated against radiation.

The Car Heating Equipment

The use of the vapor system of car heating is now almost universal on North American railroads; in fact, it would hardly be exaggerating to say that any other system of car heating on steam trains is obsolete.

The vapor system provides an ample amount of heat in each car with a minimum tax on the main steam line. It provides a steam vapor at 212 deg. F. inside the steam heat radiating pipes or coils in each car and, being at atmospheric pressure, absolutely prevents a pipe bursting from pressure. In case a pipe is broken or ruptured inside a car, the danger of scalding the occupants of the car is reduced to almost nothing.

The heart of this system is the vapor regulator. It is provided with a steam inlet valve which, when open, allows steam from the train line to enter the heating coils in the car. The flow of steam to the coils is controlled by a two-way valve of the gate type. In the open position it allows steam from the regulator to flow through the coils and thence back to the upper end of the vertical body of the vapor regulator when it passes down to the expansion diaphragm and thence to the atmosphere.

The greatest source of steam waste is through the vapor regulator. This is the result of neglect to maintain this device properly. Much of this waste is from failure to replace the diaphragm before it has lost most or all of its expansive power. When the diaphragm is in this condition, it fails to expand when exposed to the waste steam striking it and the steam inlet valve fails to close; consequently the coils are heated to a high temperature and are unable to utilize or radiate all the heat in the vapor passing through them, and a blowing vapor regulator is the result.

All parts of the steam train line should be well insulated against radiation. This includes the live steam connection between the vapor regulator and the train line, the live steam connection from the regulator to the cut-out valve, and the waste or drain line from the cut-out valve to the vapor regulator.

Two-Inch Unrestricted Steam Line Needed

Extensive experiments recently conducted prove that not only a 2-in. steam train line is essential, but also 2-in. end valves, steam conduits and steam coupler heads are absolutely needed if trains of more than twelve cars are to be heated successfully in freezing weather.

Recent tests developed that a train of fifteen cars with 2-in. steam heat equipment throughout and carrying only 113 lb. steam-heat pressure on the gage, held an average pressure on the rear car steam line of 23 lb. During this test the atmospheric temperature was 9 deg. above zero and an average speed of 34 miles per hour was maintained. The cars handled on this test were steel coaches and were well ventilated.

The same experiment with the same equipment, 2-in. steam train line, 1½-in. end valves, heads and connections on cars, atmospheric temperature 10 deg. above zero, 129 lb. on the steam-heat gage in the cab, speed 36 miles per hour, showed an average pressure on the steam train line on the fifteenth car of only 2.6 lb. At higher speeds the steam would have been entirely lost on the rear of the train and, in addition to low temperatures in the cars, freezing would have occurred if the high train speed were maintained for any considerable length of time.

Experiments conducted by the leading railroads of this country have developed the fact that with a train of 10 to 20 cars in length, the 2-in. train line, 2-in. conduits, coupler heads and end valves will allow the steam to pass through to the rear end in less than half the time required in the same number of cars, fitted with a 2-in. train line and 1½-in. steam hose, couplers and end valves.

Metallic steam conduits will resist very high pressures; however they must be flexible at all pressures and so constructed that the steam in passing through will not encounter enlarged places at the flexible joints, as such a place sets up an eddy which retards the passage of the steam to a very considerable extent. In fact, any restriction, irregularity, sharp turn or other impediment to the free flow of the steam is a great handicap and so impedes the flow of steam that a considerable difference in pressure is noted at the point of delivery and just beyond where the friction is developed.

The question of the ventilation of passenger cars is one of the greatest importance, since it bears a very close relation to the heating question. It is hardly possible to ventilate a passenger car as freely as could be desired. Ideal ventilation would provide a free sweep of fresh air through the car, which in winter is obviously impossible. It has been estimated that 1,000 cu. ft. of air per passenger per hour is the minimum air replacement which should be provided.

Weather stripping on doors and windows should always be inspected and renewed at the beginning of the cool season and as often thereafter as may seem necessary. No fixed rule can be offered as to how many ventilators should be opened in cold weather. Conditions may vary too widely on account of train speed, outside temperatures, direction of wind and the number of people occupying the car.

Double window sashes are of prime importance. Without such sash no heating system will be adequate in very cold weather, and the presence of cars with single sash in a train not only provides a source of complaint from the passengers, but is also the cause of a considerable waste of fuel.

The use of the thermostatic control in service results in a far more uniform temperature being maintained than is possible by hand control. It also results in some economy in the use of steam while cars are in service. This system works to its greatest advantage during the lay-over period. This lay-over period averages about two-thirds of the time during the term that the car is in actual service.

During the lay-over period the 70-deg. control is automatically cut out and the 50-deg. control cut in. The 50-deg. temperature provides plenty of heat to prevent the freezing of the water system on the car and at the same time enough heat to keep inside workers in the car comfortable.

The saving in fuel consumed during the lay-over period amounts to about 14 pounds per car per hour as compared with the amount consumed in maintaining a heated car of the same type with the manual control system and open vapor cut-out valves.

In conclusion we will say that where reference is made to 2-in. metallic conduits and 1½-in. rubber steam

hose it should be remembered that a 2-in. rubber steam hose is impracticable. It is too heavy, stiff and cumbersome and too expensive to manufacture, considering its short life; therefore, when considering a 2-in. steam-heat connection remember that a 2-in. metallic conduit with flexible joints is the only answer to a larger steam-heat connection between cars or between locomotives and cars or tenders. It is estimated that with the greater efficiency developed and the longer life of the metallic conduits, the latter will pay for themselves in from two to three years.

Up to the present time no whole-hearted attempt seems to have been made to insulate the metallic steam conduits against excessive radiation. The conduits should and can be properly covered with some type of insulating material. The use of such insulation on metallic conduits would reduce radiation to a very considerable degree and soon pay for its cost in fuel saved on the locomotive.

Our troubles with steam-heat apparatus in the past were due largely to improper inspection and maintenance. With proper care and attention our present system will function excellently on short or moderately long trains; that is, up to ten cars. Beyond that figure we must use the 2-inch steam line all the way from the locomotive steam turret to the last end valve in the train and even then our troubles will not be over until we insist upon closer inspection and maintenance of the whole system, but especially of the vapor regulators under the cars.

The report was signed by Chairman T. W. Kennedy, assistant general air-brake engineer, Illinois Central Memphis, Tenn.; B. J. Feeny, superintendent of fuel conservation, Illinois Central, Chicago; Frederick Kerby, assistant to chief of motive power and equipment, Baltimore & Ohio, Cumberland, Md.; J. S. Meidroth, road foreman of engines, Frisco, St. Louis, Mo.; and D. H. Varnell, road foreman of engines, Texas & Pacific, Big Spring, Tex.

Discussion

Discussion of this report centered around the maintenance of car heating equipment, particularly the vapor regulator. The conclusions of the committee that past difficulties with steam-heat equipment have been largely due to improper inspection and maintenance methods were largely concurred in by individual speakers who also emphasized the necessity of flexible metallic steam heat connectors above 1½-in. in diameter for heating long trains under severe winter conditions. The possibility of fuel economy by more effective insulation of steam train lines was emphasized on the floor of the convention, and in this connection, particular emphasis was placed on the necessity for insulating the connector piping, including the end valve, which is said to amount to about nine per cent of the total steam train pipe under each car.

Report on Locomotive Fuel

(The report on utilization and conservation of available coal and oil for locomotive use was divided into two parts, the first of which, pertaining to coal, was read by Chairman J. W. McIlvaigh (M. P.) and the second, pertaining to fuel oil, by J. N. Clark (S. P.). The coal section was confined to a discussion of present progress in fuel economy and closed with the thought that further economies must come largely by the more intensive application of fuel conservation principles already well known. Mr. Clark outlined the advantages of oil as a locomotive fuel and explained the economic reasons necessitating the conversion of coal to oil-burning locomotives or vice versa. The conclusion of the fuel-oil section of the report follows.—EDITOR.)

Recognizing the advantages of oil as a fuel, the oil-burning railroads have been pioneers in the adoption of every modern locomotive appliance tending to produce efficiency, and they have been leaders in preaching and practicing fuel economy.

It may be said to their credit that the results accomplished in reducing fuel consumption compare favorably with the best performances of coal-burning railroads. Being progressive, however, they recognize that much remains to be done and they are open to any practical suggestions.

The use of fuel oil by railroads, especially on locomotives, is not by any means confined to any particular locality, for we find it to some extent being burned in parts of the United States at maximum distances from production centers. In such instances the price is not a consideration, but its use is a necessity as a prevention of fire hazard. On those railroads where its use is almost universal, the cost as compared with coal is the controlling factor and such railroads are generally adjacent to the oil fields.

Heating the Oil

With the advent of better refining processes we are being furnished with fuel oil of a much lower gravity. This calls for heating to a much higher temperature in order to secure an even flow from the oil tank to the burner. When we were using 18 to 21 deg. Baume, fuel oil, it was only necessary to heat it to 100 deg. F. and this temperature could be fairly well guessed at by placing the hand on the outside of the oil tank. With 14 to 17 deg., Baume fuel oil, the best results are produced when heated to 140 deg. F. or as high as 165 deg. F., and placing the hand on the oil tank is no longer a dependable way to determine if the oil is at the proper temperature. This calls for the application of some sort of thermometer or heat-measuring gage. Some discussion upon this subject is solicited, for it is not so easy of solution as one might imagine.

As the necessity for doing a better job of firing oil-burning locomotives becomes more imperative we are faced with the fact that a more accurate flow of oil to the burner and a more positive method of controlling the position of the firing valve when once placed is needed.

Damper Controls, Burners and Efficiency Devices

No one factor has more to do with producing a successful and an economical performance than being able to control, under varying conditions, the amount of air admitted into the firebox of an oil-burning locomotive. On some railroads we have as many as three controllable sources of air; namely, the baffle door, flash hole and cooling space around the burner. But are these openings maintained at proper dimensions and are firemen always able to adjust these openings accurately with the means at hand? As the price of fuel oil increases, more positive means of air control are sure to follow.

On most oil-burning locomotives the present oil burner has but two things to commend it: it will bale in all the oil you can use and it is simple in construction. But we are entering upon a period of increasing fuel-oil prices, and should we not look to a burner which will produce a third factor—efficiency? I am frank to admit that I do not now know just what type of burner or atomizer the future has in store, but the sooner we begin to direct our united efforts towards producing such a burner, the quicker it will be developed. Any

burner which uses from 3 per cent to 7 per cent of the total steam output of the boiler to spray the oil into the fire-box is an expensive adjunct. 1½ per cent saved in 1927 would have meant 880,000 barrels of fuel oil.

Some of the locomotive devices which have proved their value in reducing fuel consumption are the steam superheater, feedwater heater, booster, back-pressure gage, multiple throttle, power reverse gear, air whistle, thermic syphon, and Martin circulator.

The report was signed by J. W. McIlvaigh, general road foreman, Missouri Pacific, Van Buren, Ark.; W. A. Pownall, mechanical engineer, Wabash, Decatur, Ill.; C. I. Evans, chief fuel supervisor, Missouri-Kansas-Texas, Parsons, Kan.; H. B. Kelley, general road foreman of engines, Pittsburgh & Lake Erie, McKees Rocks, Pa.; J. N. Clark, chief fuel supervisor, Southern Pacific, San Francisco, Cal.; C. C. Shaw, engineer, Missouri Pacific, Houston, Tex.; and G. McGlone, air brake supervisor, Chicago & Alton, Bloomington, Ill.

Discussion

A large part of the discussion of this report was devoted to a consideration of long locomotive runs and the resultant economy in fuel made possible by these runs. D. L. Forsythe, general road foreman of equipment of the St. Louis-San Francisco, Springfield, Mo., described at some length the endurance run recently made by a St. Louis-San Francisco Mikado type locomotive, No. 4115, which was under fire a total of 587 hours from July 19 to August 13, during which time a total of 7,350 miles was made. Mr. Forsythe said that this run was made not as a publicity stunt, but with three definite objectives: To determine how long a locomotive burning a non-clinkering coal can be operated without having to (1) knock the fire, (2) wash the boiler and (3) clean out plugged flues. Inspection subsequent to the test showed but four small tubes stopped up, one bushel of cinders in the combustion chamber and one leaking staybolt after almost one month's continuous service.

Ralph Hammond, road foreman of engines, New York, New Haven and Hartford, mentioned specifically the front-end throttle and the Nicholson thermic syphons as contributing substantially to improved operation and fuel economy. Harry Clewer, supervisor of fuel of the Chicago, Rock Island & Pacific at Des Moines, Ia., claimed for his road the record long run in regular passenger service with a hand-fired, coal-burning Mountain-type locomotive of 1,001 miles between Chicago and Limon, Colo. Mr. Clewer indicated that within the next 12 months the Rock Island would undoubtedly demonstrate the practicability of operating this locomotive back to Chicago again with the same fire and without terminal attention en route. He also mentioned the application of syphons to locomotives on this run and said that without them he doubted if the locomotives could be successfully hand-fired.

Robert Collett, fuel agent of the St. Louis-San Francisco at St. Louis, Mo., called attention to the estimate that 15 per cent of locomotive fuel is burned at terminals, one test showing as high as 32 per cent. He said that this substantial percentage of fuel which serves no useful purpose in hauling tonnage is reduced in direct proportion to the amount of time that locomotives can be kept on the road and away from engine terminals.

There was also considerable discussion on the subject of locomotive grates, the consensus being that combustion efficiency is promoted in most cases by controlling the flow of air with the grates and carrying a thin firebed. This permits passing many small evenly-spaced jets of air (depending upon the grate design) through the fire and facilitates complete combustion with the minimum excess of air.

Locomotive Stoker Development

By Frank Roesch

Sales Manager, Standard Stoker Company, Inc., Chicago.

The first successful locomotive stokers developed to meet all conditions were, in the light of present practice, quite intricate and complicated. They did a mighty good job of firing, we must admit, and when conditions were favorable, i. e. not too many big pieces of tramp iron mixed with the coal, were reliable and went along about their business without any hesitation—but when a piece of tramp iron got caught in the conveying system, old man Trouble was right on the job, and therefore it was necessary to design the machine so to enable the operator to cut out any one of the conveyor or elevator units in order to determine with the least loss of time just where the obstruction was located. All this, of course, meant more mechanism, and more mechanism meant more parts to look after, to lubricate, to keep in repair, and to fail. Therefore, in the further development of the locomotive mechanical stoker, instead of adding parts as in the case of the air brake, one of the stoker companies started on the process of elimination. They recognized the fact that as long as coal is handled as it is at present we can always expect to find a certain amount of foreign matter, such as tramp iron, wood, old overalls, etc., mixed with it, and that the proper thing to do was to eliminate so far as possible such parts of the stoker mechanism as seemed to cause the most trouble from this source.

Their investigations and records showed that as a general proposition the smaller pieces of tramp iron, such as track spikes, brake-shoe keys, mining-machine bits and cutters, caused the most delays, catching in the conveying mechanism where the direction of travel was changed, viz., from the horizontal to the vertical. Therefore it appeared that the logical thing to do was to eliminate the vertical screw, if possible. This was found to be perfectly feasible. It was then found that while tramp iron of reasonable size could be passed through the stoker without any trouble, medium sized pieces, such as mine-car coupling chains, short clinker hooks, brake rods, etc., would sometimes hang up at the conveyor screw bearings, and while they did not stop the machine, they did affect its operation; therefore it was decided to eliminate these also, and as a result a stoker was developed with no vertical screws, no bearings, no paddles, or anything else in the conveying system except the crusher, that would present any obstacle to the free movement of any piece of foreign matter of a reasonable size that might be mixed with the coal; consequently when the stoker stopped, there was but one place to look for the obstruction, viz., at the crusher.

The Distributing System

The distributing system was another problem. Various means were employed such as steam jets, plungers, moving vanes, paddles, etc. While each method had its advocates, eventually they simmered down to three general designs, viz., strictly mechanical as in the alternating paddle type, semi-jet and paddle or moving vane type, and the straight steam jet type.

While each system of distribution gave excellent re-

sults, yet owing to the additional mechanism required for straight or semi-mechanical distribution, with its attendant limitations and high maintenance cost, and considering the better control over the distribution with adjustable steam jets, the latter method was finally accepted by the railroads as best adapted to meet all requirements.

So you see that the development of the locomotive mechanical stoker was not a problem of added refinements, but a question of the elimination of all troublesome and unnecessary parts—the construction of a machine that was dependable under all ordinary conditions of service—a machine that would stand up against abuse and rough usage, and with the delivery and distribution wholly under the control of the fireman at all times—a machine driven by a rugged low-speed engine of a design familiar to all railroad mechanics.

Further, it was recognized that the general arrangement of the stoker must be such as to make it readily applicable to any type of locomotive, which meant that the driving engine could be located on any part of the locomotive or tender best suited for the purpose.

The whole job required a lot of time, patience, study, money, and (last but not least) the full and hearty cooperation of the railroad officers and employees, but, nevertheless, the end justified the means, and in the stoker of today you will find incorporated and combined the best thoughts of all the stoker designers, manufacturers and operators developed during the past thirty years.

Few Additional Striking Changes in Stoker Design Probable

The stoker of today will remain substantially as now designed. It has met the test of service. There is nothing left to eliminate. It can be applied to any type of locomotive. It is successfully and economically firing the largest locomotive in the world having an estimated maximum coal consumption of over thirty thousand pounds per hour, burned on a grate of 184 sq. ft. area, as well as engines with a maximum coal consumption of but two thousand pounds per hour, burned on a grate of 21 sq. ft. area. A few refinements may and undoubtedly will be added later on, such as coal-measuring devices, semi-automatic control, etc., but so far as the general design is concerned, it will remain substantially the same, unless the general design of locomotives is changed.

It has proven its economy and its efficiency. As mechanical operation instead of hand labor is the slogan of today, it would appear that a locomotive without a stoker is as incomplete in the present era as one without an air brake.

* * *

A C. B. & Q. Train Along the Mississippi River at St. Louis

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended September 21 amounted to 1,166.330 cars, an increase of 22,199 cars as compared with the corresponding week of last year, and an increase of 39,928 cars as compared with the preceding year. All districts except the Northwestern and Central Western reported increases as compared with the corresponding week of last year while all except the Pocahontas and Southern showed increases as compared with 1927. Increases as compared with both years were reported in the loading of ore, miscellaneous freight, coal, merchandise and coke, while decreases as compared with both years were shown as to grain, livestock and forest products. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading

Week Ended Saturday, September 21, 1929

Districts	1929	1928	1927
Eastern	261,838	254,975	242,664
Allegheny	235,900	225,688	220,809
Pocahontas	63,049	58,315	64,732
Southern	156,943	149,571	167,561
Northwestern	180,612	184,198	177,384
Central Western	171,799	175,583	165,706
Southwestern	96,189	95,801	87,546
Total Western Districts	448,600	455,582	430,636
Total All Roads	1,166,330	1,144,131	1,126,402
Commodities			
Grain and Grain Products	51,750	60,263	60,279
Live Stock	32,125	36,845	32,599
Coal	195,779	181,045	184,074
Coke	11,847	10,182	9,503
Forest Products	62,545	64,477	69,048
Ore	68,956	64,358	54,320
Merchandise L. C. L.	271,344	266,658	269,036
Miscellaneous	471,984	460,303	447,543
September 21	1,166,330	1,144,131	1,126,402
September 14	1,153,062	1,138,060	1,127,643
September 7	1,017,072	991,385	989,799
August 31	1,160,210	1,116,711	1,117,360
August 24	1,135,567	1,080,698	1,109,341
Cumulative total, 38 weeks	38,677,475	37,027,797	38,045,851

The freight car surplus for the week ended September 15 averaged 147,845 cars, a decrease of 9,761 cars as compared with the week before. This included 83,853 box cars, 26,325 coal cars, 20,236 stock cars and 11,965 refrigerator cars.

Car Loading in Canada

Revenue car loading at stations in Canada for the week ended September 21 totalled 84,155 cars, an increase over the previous week of 1,977 cars and a decrease from the same week last year of 10,438 cars.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada		
September 21, 1929	84,155	40,630
September 14, 1929	82,178	38,695
September 7, 1929	70,119	36,518
September 22, 1928	94,593	41,639
Cumulative Totals for Canada		
September 21, 1929	2,574,189	1,559,940
September 22, 1928	2,537,409	1,484,978
September 24, 1927	2,336,891	1,426,908

OVER 250,000 MILES were saved by 42,000 English motorists during the first seven months of this year, by shipping their cars by rail through the Great Western's Severn Tunnel, thereby avoiding a highway detour of approximately 60 miles on the journey between England and Wales. In July alone nearly 1,000 cars were loaded at Pilning, Patchway, and Severn Tunnel Junction. Cars are loaded within half-an-hour of the departure of the train, and gasoline equivalent to the amount withdrawn at loading is refunded at the destination.

The Automobile Goes to Work for the Great Northern

Road turns to use of trucks and highways to aid maintenance forces—Big factors in supply work

Part I

Store Trucks at St. Paul, Minn. and Superior, Wis.

WITHOUT following any set program or having any aim in making installations other than to be reasonably sure that each unit will earn its keep, the Great Northern has, in a comparatively short period, acquired a large array of automotive equipment for its own non-revenue operations. Over sixty company-owned automobiles and highway trucks, representing an investment of around $100,000, have been provided to assist the stores, maintenance of way and mechanical departments in their daily work. This equipment is scattered from the Mississippi river to the West Coast, carting stores' supplies, hauling crews of men, working on construction projects, policing telephone lines, doing emergency shipping, and everywhere tending to reduce overtime charges and wasteful work. It is roughly estimated that the equipment is saving its cost every year as a result of the changes that it has effected in material handling and maintenance operations.

Trucks Serve all Departments

The Great Northern's use of automotive equipment has been a distinctive feature of its improved methods in recent years. Considering the amount of equipment in use and the operations followed, the road has virtually put the auto and the highway on the pay roll. The equipment is divided among the stores, mechanical, roadway, bridge and building, and other departments, depending upon local conditions. It does not follow, however, that the equipment is used only by the department operating it, for, in most cases, the trucks are operated to serve all the needs for highway transportation in their area. Thus, while the store department has only five trucks specifically assigned to it, the trucks at practically all points do stores department work. Likewise, the stores department trucks do work for other departments.

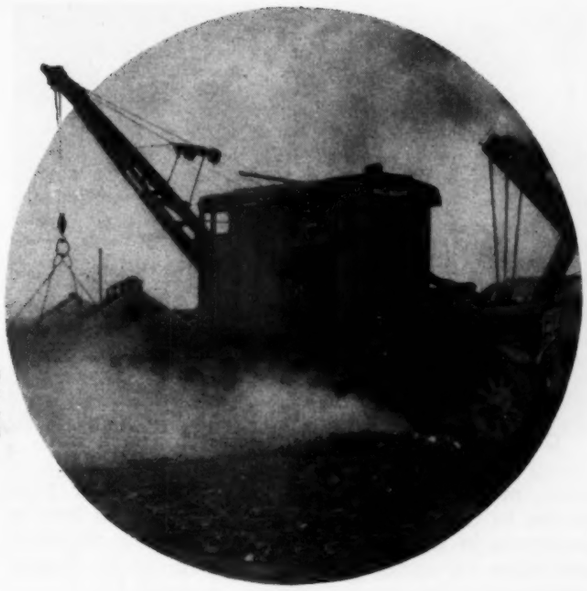
The largest area of highway truck operations is in the vicinity of Lake Superior where the Great Northern handles a large ore traffic from the iron mines in Northern Minnesota to its docks at Allouez on Lake Superior. In this region are seven highway trucks and two busses. At Allouez, the bridge and building forces and the car forces have 2-ton trucks and a 26-passenger bus is assigned to the mechanical department. At Superior the track department has a 1½-ton truck and the stores department has two 1½-ton trucks, while at Kelly Lake the track department has a crane truck and an 18-passenger bus and the car department has a 1-ton truck.

At Superior, Wis.

The location of the shops and repair tracks in relation to the main storehouse at Superior is such as to encourage the operation of automobile trucks by the supply department. The shops and principal yards are located about six miles from a large engine terminal serving the ore receiving and classification yard and the ore docks. There is no commercial freight service between the two points, and there are, therefore, no regular trains in which cars of company material can be moved. It is also difficult and costly to handle cars of material in a yard devoted to the handling of iron ore. Moreover, the heavy locomotives used in the ore traffic are operated on a program requiring each engine to make more than one round trip per day and, because of this heavy service and mileage, it is frequently necessary to send such material as driving boxes, crosshead guides, pistons and main rods to the Superior

shop, six miles away, for rush repairs.

By using the automobile truck, such articles can usually be repaired and replaced in less time than it would take for the material merely to reach the shop, if handled by freight, thus avoiding many costly delays to train service and also making it possible to handle the ore tonnage with a smaller number of engines. In addition to this work, the two store trucks at Superior are used for delivering material to other small terminals and subsidiary companies in the region, and perform trucking service for all departments at Superior. They also run between Duluth and Superior, picking up material purchased locally on emergency orders.



Shifting Tracks on the Iron Range with a Crane Carried by Auto Truck

Keep Operating Costs

A careful record of operating costs of each truck is maintained on the basis of the mileage recorded by speedometer readings, and the average results per month over a period of one year are as follows:

Item	Truck No. 1	Truck No. 2
Cost of driver, supplies and repairs	$133.09	$137.96
Days in service	24.58	22.25
Mileage	646	296
Tons handled	158	212
Miles per gallon	7.09	3.41
Cost per mile (cents)	20.8	53.2
Cost per ton (cents)	90	79

The record shows that each truck is in service over 22 days each month and that they travel 1,000 miles per month. There is a wide variation in the cost per mile, or per ton, between the two trucks, resulting from the fact that one is used largely in shop territory where it is stopping and starting constantly, while the other is used for longer trips between terminals.

More Effective Track Upkeep

The track department at Superior uses a 1½-ton truck because of the problem confronting it in maintaining main line and terminal trackage between Superior and Duluth. These two cities are about five miles apart. Considerable of the trackage is on trestles crossing estuaries of Lake Superior or located around wharves, requiring the maintaining of a section crew in each city. The track is easily accessible from the highways connecting the two cities, however, and the operation of highway trucks to haul the section crews to and from their work, and their supplies from the storehouse to the point of use, has been so satisfactory that it is planned to consolidate the forces.

The bridge and building department use a 2-ton truck for hauling men and building material to Duluth, Allouez and Saunders, as well as in Superior. It is about 20 miles from Duluth to Allouez. For the most part, the carpenter crews live in Superior where their supplies are also located. The conditions are compli-

Store and Shop Trucks Operating Between St. Paul and Minneapolis

Car Inspectors Taking a Business Trip in a Bus

cated, moreover, by the absence of passenger train service to Saunders and Allouez. Time was lost by employees in moving about the terminal at Superior, and when carpenter gangs were required at Duluth, Allouez or Saunders to complete a small job, it was necessary to wait until the work at one point was completed before moving to the other. By facilitating the moving of the men and getting the required materials, it is estimated that this truck saves $250 a month over the cost of former methods.

The mechanical department at Allouez uses a 2-ton truck in removing rubbish and scrap material from the repair track and delivering new materials to points convenient for car workers, while in the winter, this truck removes snow and ice from repair tracks, eliminating the need of an engine crew and flat cars for the purpose and the time of four or five men, at a saving of $332 a month.

In this vicinity, besides the two-ton truck, the mechanical department operates a 26-passenger bus which has a unique service to its credit. It is a long way from the roundhouse at Allouez to the city streets of Superior—too far to expect employees engaged at the roundhouse, and the enginemen and train men reporting there, to walk. Some means of transportation have always been required. Previously a street car was operated over the distance, but the time came when this street car, which was an obsolete type, and the track were constantly in need of repair and it became increasingly necessary to operate a locomotive and coach to handle the passengers. This trouble and expense have now been eliminated by the bus which makes the trip regularly and is also available for special trips at small expense compared to that previously confronting the road in maintaining the required street car or rail service.

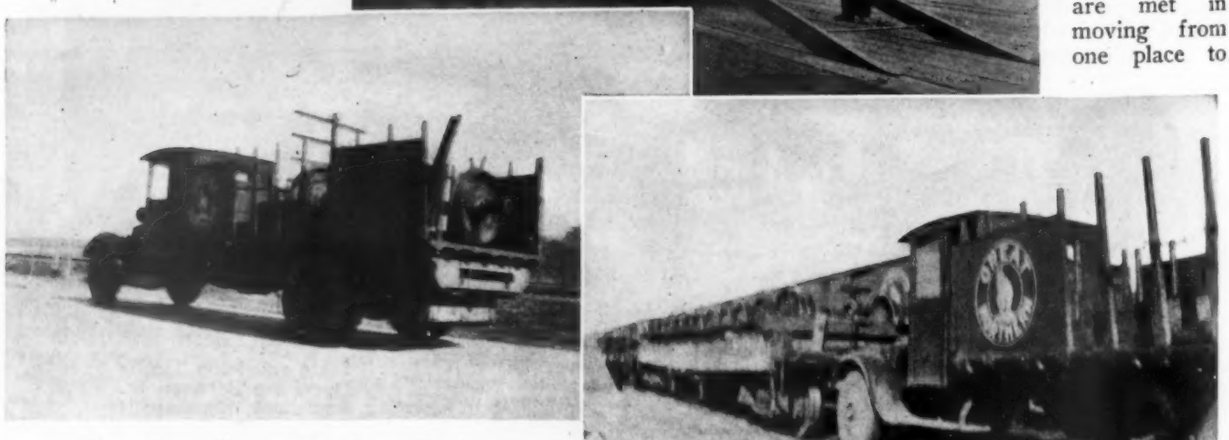
Operations in Ore District

Operations in the ore district center around Hibbing and Kelly Lake, Minn., about 100 miles inland from Duluth and Superior, and present an unusual maintenance problem by reason of the steam shovel mining which requires the continual shifting of much trackage and the transporting of men over a considerable radius. Here the auto trucks have proved especially useful. It is estimated that the one-ton truck operated by the car department at Kelly Lake saves a minimum of $85 a month by delivering material from Kelly Lake to Nashwauk, 20 miles distant, where car forces are working, and hauling car men to various mines for emergency work which would otherwise have to wait upon the infrequent train service.

It is estimated that the 18-passenger bus used by the track forces in the mining district saves the company $150 per month by eliminating lost time in hauling the men, materials and tools required in the maintenance and shifting of the spur tracks in the mining zone in the course of the ore-excavating operations there. All mining spurs are accessible by highway and with the bus, one gang operating out of Kelly Lake serves all ore pile tracks between Nashwauk and Chisholm, a distance of 15 miles. Under present operations, practically no delays are met in moving from one place to

Loading Wheels at Sioux City, Ia.

Off on Emergency Call for Wheels



Switching a Car of Wheels by Truck

another, which is not possible with rail, motor and hand cars over tracks frequently blocked by trains.

Crane Truck Saves $500 Per Month

The outstanding operation in the mineral range and lake district is that of a Sterling truck on which a Universal gasoline-operated crane is mounted. This crane not only carries lifting hooks, but is equipped with a small clam shell bucket for handling sand, cinders, etc., and with a large clam shell bucket for snow. This machine will do anything that a light locomotive crane will do and it has the advantage of being able to travel by road.

From April 15 until October 15 of last year, this machine was used in the mining district for shifting ore pile tracks, which are moved in panels of 30 ft. During days when, because of the unsteadiness of ore pile work, the crane was not required there, it was equipped with the clam shell and used for loading gravel at Kelly Lake. It was also used to unload engine sand at Kelly Lake and at the Allouez and Superior roundhouses, 100 miles distant. It has also been shown to be well adapted to operating between the tracks in the material yard, loading rails, switch material, switch ties, etc. When it is desired to handle rail on the line, the

A Three-Wheeler Carrying Material from the Stores to Shops in St. Paul

crane is easily moved from the truck to a flat car and used as a rail loader, when a boom extension is provided for handling the track panels in double lengths. Last winter it was used in the yards at Superior for loading snow into cars, during which time it filled 100 general service cars in 10 days.

The crane loads gravel at a cost as low as three cents per yard. Only small amounts of gravel are required at a time in the region, which does not justify the continuous operation of the pit and it is not only possible, therefore, to assign the crane to this pit when not required elsewhere, but also to operate the pit without requiring any train service. On the whole, the crane is considered equal to a gang of at least ten men and is estimated to save an average of $500 per month.

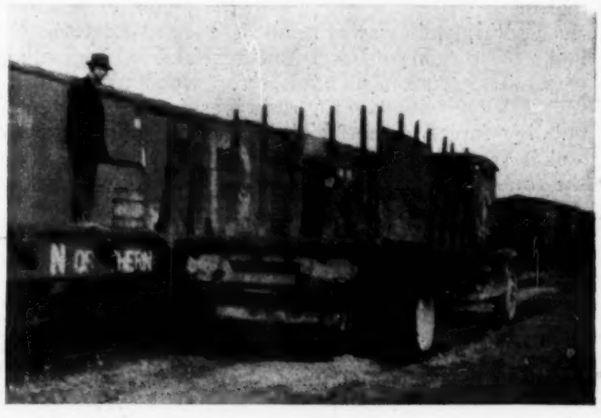
Trucks Cut Stores Stocks

The cities of Minneapolis and St. Paul form a region which has encouraged the installation of auto trucks because of the large amount of business conducted by the Great Northern there. There are two shops and two general storehouses in St. Paul, while an unusually large amount of trackage serves both cities. In addition, the two cities form a large supply point for the roads. There is much trucking to do. It has been customary to hire van service in order to avoid switching, but in recent years this work has been reduced and the highway work increased by the installation of at least six trucks, two operated by the store and one by the shops in St. Paul, and three by the bridge and building forces in Minneapolis. The two 1½-ton store trucks, deliver practically all of the material required for maintenance work in Minneapolis, the transfers to the Jackson Street stores or the general office, and the local freight from the Dale Street shop.

Bridge and Building Department Forces Loading Piling and Timbers on Flat Cars with a Truck

During the typical month of April of this year, one truck handled 94 tons of material and traveled 794 miles in the 26 working days, while the other handled 450 tons of material and traveled 812 miles. These two trucks have greatly expedited movements of material to and from the general store in the territory served, and the speed at which deliveries can be made and the regularities of service have made it possible to reduce the amount of material which it is necessary to carry at the local stores to protect current demands of the using departments.

The shop forces in St. Paul are also contributing to the reduction in non-revenue service handling costs in the vicinity by operating a one-ton truck which hauls car lighting batteries, drawbars, triple valves, springs, and other material to the coach yard for passenger cars; and makes rush deliveries of material from the battery



Unloading Spikes and Bolts from Cars to Truck for Building Work

shop to cars and locomotives at the roundhouse. This truck goes to the local freight house for material received for special repairs to steam shovels and pile drivers, and to the St. Paul foundry or other firms for castings and other supplies.

The other three trucks in the twin city district, consisting of two 2-ton and one 5-ton trucks, are operated by the bridge and building forces in Minneapolis. They are used chiefly in hauling snow, coal, sand and materials used in the repair of bridges and buildings. Without them, much of the work would necessitate the hiring of van service or could only be done by push car operations or switching at considerable expense and delay. Taking into consideration specific work done, and comparing the cost of the work as nearly as possible with the corresponding expense without trucks, it has been estimated that the trucks save over $500 per month, as expressed in the following statement in which the truck hire is estimated at $3 per hour:

Truck No. 1

Jobs	Hours	Labor	Alternative Handling	Saving
Haul material	4	$ 2.35	Load in car and switch	$ 4.25
Haul oxygen tanks	44	25.70	Hire truck at 5 cents cwt.	75.00
Haul material	6	3.50	Carry by hand	1.50
Haul material	8	4.60	Load and switch	5.50
Haul material	30	17.50	Load and switch	7.50
Haul material	78	45.55	Hire truck	188.45
Haul material	25	14.60	Load and switch	None
Haul material	3	1.75	Hire truck	7.75
			Total saving	$289.45

Truck No. 2

Haul snow	20	$11.65	Hire truck	$ 48.35
Haul snow	6	3.50	Hire truck	14.50
Haul snow	30	17.50	Hire truck	72.50
Haul snow	12	7.00	Hire truck	29.00
Haul coal	3	1.75	Hire truck	7.25
			Total saving	$171.50

Truck No. 3

Haul bridge material	13	$ 7.60	Hire truck	$ 31.40
Haul fence material	4	2.35	Hire truck	9.65
			Total saving	$ 41.05

No More Trap Car Work

Reference has been made to the truck operated by the mechanical forces at St. Paul. This department also operates a 5-ton truck at St. Cloud, 75 miles west. St. Cloud is the location of the company's largest shop and a place where the store department handles much scrap and carries a system stock of car materials. The truck hauls to the store all car castings and other material reclaimed at the reclamation yard; carries various material, required by yard forces, from the store, wood mill or shops; hauls gasoline to the pump house at the river several miles away; and delivers and returns the tanks of oxygen and acetylene required in dismantling cars. The truck also hauls scrap wood to the boiler room, delivers lumber for rush jobs for the bridge and building forces to the freight house several miles away, and is frequently pressed into service to make trips to the foundry in St. Paul, 75 miles away, for castings required on short notice.

Keep Car Repairers Busy

The trucking back to the freight house and foundry, in particular, saves the company large sums by relieving the various departments from moving the materials in cars. At present, practically no short haul movement of company material is made by rail, at least no rush material. It is all handled by the trucks over excellent highways.

At Willmar, Minn., a two-ton truck is operated by the station forces for general service. It is estimated that this truck saves as much as $245 a month, as follows:

Eliminating switching, transfer platform labor, and push car labor otherwise required to haul l.c.l. company material between the freight house and the storehouse and to haul small amounts of lumber from the material yard direct to the l.c.l. cars at the transfer platform	$150
Dispensing with switching and train service for bridge and building crews and traveling on passenger trains, otherwise required to haul small amounts of material and bridge carpenters to nearby stations for emergency repairs to stock yards, water supply facilities, and bridges	60
Overtime saved by hauling car men, and material to points within 50 miles for repairing bad order loaded cars instead of shipping the men by passenger train, and their idling after the work until the next train	25
Hauling heavy track material from the store or freight platform to points on the line where required for track repairs, otherwise requiring section labor to use the push cars in congested yards	10

At Sioux City, Ia., the engine terminal and store are not only some distance from the car repair and bridge and building yard, but several miles from the center of the city, and from the freight house and passenger station. Here a three-ton truck is operated by the station forces for general service, that saves around $281 per month, computed as follows:

Saving in switching service and transfer platform labor by hauling l.c.l. material between the freight house and store	$130
Saving in switching and train service and travel time for crews by trucking bridge and building material from the storage yard and store to points in the terminal, and also hauling carpenters to nearby towns for emergency repairs to water stations, stock yards, bridges, etc.	30
Saving in switching service by spotting cars of company material for loading or unloading	30
Saving overtime of car men and delays to equipment by hauling car men and material to points within 60 miles for repairing bad order loads	66
Saving section labor by trucking track material from the store and freight house to points in the yard, thus dispensing with push car work	15
Saving car labor by loading bad order car wheels on flat cars for shipment to the St. Cloud shop	11

An important saving in connection with this trucking at Sioux City and Willmar, which is difficult to express in money, is the promptness with which material is handled, which eliminates important delays in completing repairs.

At Breckenridge, Minn., a five-ton truck, operated by the division forces and chargeable jointly to the operating and the store departments, has improved the service to shippers of revenue freight as well as serving the maintenance department. Here, all l. c. l. shipments are trucked from Breckenridge to Wahpeton, a neighboring town, instead of being shipped by freight, at a saving of about $300 per month. In addition, the truck saves $100 per month by eliminating switching and transfer platform labor for l. c. l. company material between the freight depot, the transfer platform and the storehouse; also $20 per month for hauling bridge and building material to repair points and for hauling the carpenters to nearby stations for emergency repairs, to which savings are to be added a $25 a month saving in overtime for car men and delays to equipment by hauling car men and material to points within a radius of 15 miles for repairing bad order loads, also $15 per month for hauling heavy track material to yard points, instead of moving it through the yards on push cars, a total saving of around $470 per month, the trucks working 16 hrs. per day.

At Grand Forks, N. D., the car department operates a 3-ton truck eight hours daily in moving material to and from the store, roundhouse, freight depot and passenger station, and hauling material for section, and bridge and building forces. The truck is also used to dispatch car men for emergency repairs to bad order cars. Previously, the stores department hired trucks to deliver rush materials and on the basis of 5 cents per 100 lb., or a minimum of 50 cents a load, it is es-

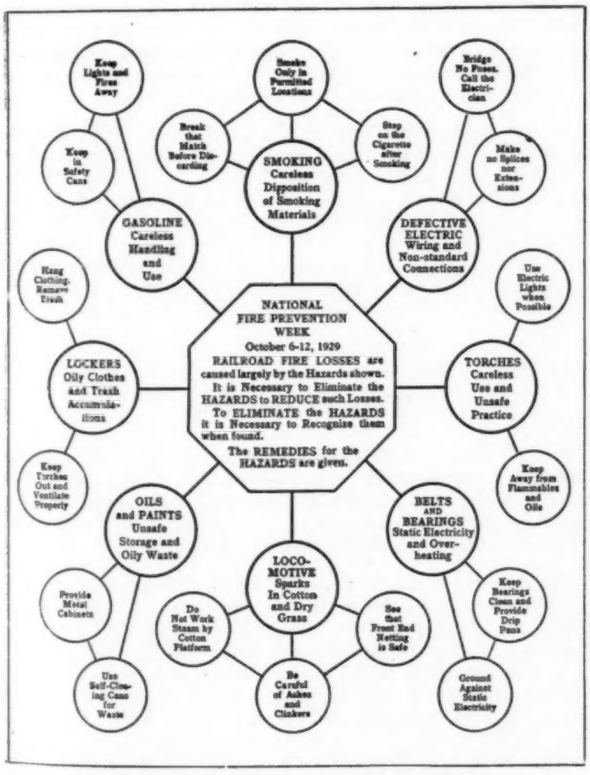
timated that the truck is now saving at least $22 a month in this work, while it is also eliminating at least three switch engine hours daily at a saving of $18.75 per day. By charging $4.24 labor per day for car helpers driving the truck (since the driver works as a car helper when not driving) and by charging 75 cents per day against the truck for gas and oil, it is estimated that in the aggregate, the savings amount to approximately $379 per month.

Thirteen Trucks Save $45,000 Annually

Considering the 13 trucks in the foregoing description that are operated under the various division superintendents and taking the savings reported by the division on the basis of the estimated reduction of handling expense and other costs, less labor and fuel for trucking, not including interest on investment, depreciation or repairs, the 13 trucks save $3,800 per month, or possibly $45,000 a year, divided as follows:

Location	Truck	Forces	Monthly Savings
Allouez	2-ton	B. & B.	$250
	2-ton	Car	332
Superior	1½-ton	Track	250
Kelly Lake	with gas crane	Track	500
	1-ton	Car	85
	18-pass.	Track	150
Minneapolis	2-ton	B. & B.	190
	2-ton	B. & B.	41
	5-ton	B. & B.	215
Willmar	2-ton	B. & B.	245
Breckenridge	5-ton	B. & B.	460
Sioux City	5-ton	B. & B.	482
Grand Forks	3-ton	Car	379
Fargo	2-ton	Station	599

National Fire Prevention Week, October 6-12


NATIONAL FIRE PREVENTION WEEK
October 6-12, 1929
RAILROAD FIRE LOSSES are caused largely by the Hazards shown.
It is Necessary to Eliminate the HAZARDS to REDUCE such Losses.
To ELIMINATE the HAZARDS it is Necessary to Recognize them when found.
The REMEDIES for the HAZARDS are given.
SMOKING Careless Disposition of Smoking Materials
Keep Lights and Fires Away
Smoke Only in Permitted Locations
Break that Match Before Discarding
Keep in Safety Cans
Step on the Cigarette after Smoking
GASOLINE Careless Handling and Use
Hang Clothing. Remove Trash
LOCKERS Oily Clothes and Trash Accumulations
Keep Torches Out and Ventilate Properly
OILS and PAINTS Unsafe Storage and Oily Waste
Provide Metal Cabinets
Use Self-Closing Cans for Waste
LOCOMOTIVE Sparks In Cotton and Dry Grass
Do Not Work Steam by Cotton Platform
Be Careful of Ashes and Cinders
See that Front End Netting is Safe
BELTS AND BEARINGS Static Electricity and Overheating
Keep Bearings Clean and Provide Drip Pans
Ground Against Static Electricity
TORCHES Careless Use and Unsafe Practice
Keep Away from Flammables and Oils
DEFECTIVE ELECTRIC Wiring and Non-standard Connections
Bridge No Fuses. Call the Electrician
Make no Splices nor Extensions
Use Electric Lights when Possible

TRANSPORTATION MUTUAL INSURANCE COMPANY

Conditional Control of B. R. & P. by B. & O. Recommended

WASHINGTON, D. C.

A RECOMMENDATION that the Interstate Commerce Commission approve a more or less temporary acquisition by the Baltimore & Ohio of control of the Buffalo, Rochester & Pittsburgh by purchase of its stock is made in a proposed report by Assistant Director C. V. Burnside of the commission's Bureau of Finance made public on October 2. He proposes that the commission find that the acquisition will be in the public interest and that the consideration to be paid for the stock is reasonable but that approval should be subject to the condition that until the further order of the commission the stock shall be held in such manner as will readily permit the control of the B. R. & P. to be transferred to some other carrier or carriers, if later determined by the commission to be required by the public interest. Other conditions are that all routes and channels of trade via existing gateways now employed for the movement of traffic of the B. R. & P. shall be kept open and efficiently maintained, so far as within the applicant's power unless otherwise authorized by the commission, and that, until further order, the operations, accounts and statistics of the B. R. & P. shall be maintained in such manner as to preserve the continuity of records for purposes of comparison.

At another point in the report, discussing the intervention of the Mt. Jewett, Kinzua & Riterville for the purpose of securing the inclusion of its line as a part of the Baltimore & Ohio system, the report says that "the control authorized should be regarded for the present as temporary in character, and the disposition of the intervener's line and any other short lines in similar position should be deferred pending a more permanent allocation of all lines involved."

By contract dated March 1, 1929, the Baltimore & Ohio agreed to purchase, subject to the commission's approval, from the Alleghany Corporation, 43,024 shares of the 6 per cent preferred stock and 96,927 shares of the common stock of the B. R. & P., these amounts constituting 84.82 per cent of the outstanding stock, for $14,263,216, plus interest at 6 per cent to date of settlement. It also offered to purchase the remaining shares at the same net price per share.

The commission had denied, in December, 1927, an application of the Delaware & Hudson for authority to acquire control of the B. R. & P. by lease, largely on the ground that the disposition of such a strategic line should be deferred until after further consideration of the general consolidation question in eastern territory. At the hearing the D. & H. opposed the B. & O. application, contending that the same rule should be applied in the case of the B. & O. The Pennsylvania, Wabash and Pittsburgh & West Virginia also opposed the application. The discussion in the report of the general question involved in the application follows:

The contention of the interveners that permanent disposition of the B. R. & P. is not justified by the present record is no doubt sound. However, it does not follow that a decision upon this application should be controlled by the action taken upon the application of the Delaware & Hudson looking to a lease of the B. R. & P. The reasons for that action were stated in the report, 131 I. C. C. 750, but it may be mentioned here that the properties of the Delaware & Hudson and the B. R. & P. had no direct connection and their traffic and geographic relationships were not so close as between the applicant and the B. R. & P. Further, the proposal in that case was to lease and not merely to acquire controlling interest through stock ownership. The former method involves complete consolidation of

operations and the discontinuance of operating reports by the lessor company. In the present case it is understood that no such unification is at present contemplated. It appears that under the present contracts the applicant and the B. R. & P. maintain joint agencies on the lines jointly operated, although maintaining separate train service. As understood, it is planned to extend this combination to the train operations over the tracks affected. Complete cessation of train operation on these tracks by either company could not be effected without authority from the commission under section 1 of the act. Therefore, it is necessary to assume that a division of revenue and expense would be necessary, analogous to the present separation of maintenance expense on a wheelage basis. Much coordination in the interest of more economical administration and operation is possible without the loss of the operating identity of the B. R. & P.

In appraising the merit of the present application its relationship to the proposed new route between New York and Chicago, evidently deemed of much importance by the applicant, must be practically disregarded. The record affords no basis for even a tentative conclusion as to the necessity of the particular route proposed, as a part of the general transportation system, notwithstanding its very apparent value as a proposed part of the applicant's system. Applications are now pending before the commission which bring into issue not only the disposition of the B. R. & P., but also that of other and more important lines upon which the applicant depends for the consummation of its plan. These applications conflict in many other respects and their disposition will require a broad survey of the transportation situation in the East. However, the advantages in economy and efficiency here indicated as possible through the greater coordination of operations of joint facilities, if effected without serious impairment of service, should be realized, whatever the final disposition of the latter company. To secure this public benefit, and others which will be promoted by more complete identity of interest, the application should be granted, but with the condition, among others, that pending the further order of the commission the stock of the B. R. & P. must be held in such manner as will readily permit the control of the B. R. & P. must be held in such manner as will readily permit the control of the B. R. P. to be transferred elsewhere.

In reaching this conclusion but little weight can be given to the element of public interest involved in the proposed development of increased traffic between Buffalo and Baltimore via the B. R. & P. It is borne in mind that the route has long been in existence, apparently without the development of much traffic. It passes through Pittsburgh and is some 200 miles longer than that of the Pennsylvania. The operating characteristics of the latter are not shown of record, but it appears that there are a considerable number of heavy grades on the B. R. & P., principally against southbound traffic. For a distance of about 40 miles southeast of Buffalo the ruling grade is 89 feet per mile, equivalent to 1.69 per cent, and other grades are nearly as severe. The utility of the B. R. & P. as a route to points to the south and southwest, reached more directly by way of the applicant's system, is more apparent.

* * *

The Pennsylvania's "Pittsburgh Express" Eastbound Near Lewistown Junction, Pa.

Looking Backward

Fifty Years Ago

The total reported investment in the 81,840 miles of railways in the United States in 1878 was $4,772,297,000, or an average of $53,310 per mile. This compares favorably with the 17,333 miles of British railways which have a capital investment of $3,890,000,000, or more than $224,000 per mile.—*Railway Age,* October 2, 1879.

The Wilmington, Columbia & Augusta [now part of the Atlantic Coast Line] was sold at Wilmington, N. C., on October 1, under foreclosure of a first mortgage and was bought for $860,500 for the bondholders. The road extends from Wilmington, N. C., to Columbia, S. C., 189 miles, and had, by the latest report, $4,248,000 bonded debt and $1,008,000 floating debt. —*Railroad Gazette,* October 3, 1879.

The Jacksonville, Pensacola & Mobile was sold at Jacksonville, Fla., on September 25 under a decree of the United States Circuit Court and was purchased by the attorney for the trustee for $50,000, subject to a prior lien of $800,000. This road and the Florida Central [both now parts of the Seaboard Air Line], extending from Jacksonville to Quincy, 210 miles, have been the subject of very complicated litigation for the past six years. The purchase price for 60 miles of the Florida Central, which was sold at the same time, was $305,000. —*Railroad Gazette,* October 3, 1879.

Twenty-Five Years Ago

The head-end collision at New Market, Tenn., on September 24, which killed 63 persons and injured as many more, raises with awful force the question whether the standard code is not seriously defective in failing to require that orders for opposing trains must be sent to the operator at the meeting point, as well as to the trains.—*Railway Age,* October 7, 1904.

At the semi-annual meeting in London on September 29, the shareholders of the Grand Trunk [now part of the Canadian National] voted to ratify the purchase of the Canada Atlantic. The Canada Atlantic extends from Depot Harbor, Ont., to Allburgh Junction, Vt., 400 miles, and its acquisition will provide the Grand Trunk with a line from Georgian Bay, via Ottawa, to the Vermont line, taking out of the field an important competing route for ocean-bound freight from the lakes to the Saint Lawrence river.—*Railway Age,* October 7, 1904.

Ten Years Ago

For the first time the railroads of this country, through the Railroad Administration, have entered into a national agreement with the shop crafts. The agreement includes 186 miles and provides for a maximum wage increase of four cents per hour, effective May 1, 1919.— *Railway Age,* October 6, 1919.

The railways of England, Scotland and Wales were paralyzed on September 26 by the most complete strike in their history, and all the business of the country was disorganized for several days; but it seems certain that the strike will fail. People and press condemned the 60,000 strikers with substantial unanimity. The Government at once suspended the demobilization of the military forces and prepared to run trains with volunteers. Over 80,000 private motors were offered to the Government which was said, by September 29, to have the situation well in hand.—*Railway Age,* October 6. 1919.

Communications and Books

Long Distance Travel

MANSFIELD, OHIO.

TO THE EDITOR:

Replying to your editorial, "Popularize Long Distance Travel," page 622, September 14 issue, I believe the big reason for long distance travel by automobile is the use of car on arrival at destination. Anyone accustomed to constant use of a car, could not be satisfied without one on his vacation.

A. J. KNIGHT.

Favors English over Esperanto

PHILADELPHIA, PA.

TO THE EDITOR:

The case for English rather than Esperanto is stronger than Mr. Abbott puts it (*Railway Age*, September 21, page 691). No other language would give one learning it opportunity to make himself understood in as many parts of the world, and especially in as many parts of the commercial world, as does English, and there is a vast literature accessible to one who speaks English which would be entirely lacking to the student of Esperanto. To a Frenchman, a German, an Italian or any other national there is no language that would increase his opportunity to understand and to be understood on as broad and universal a scale as English and not in generations could Esperanto afford the same advantages. Any non-English nation, then, could gain more by teaching English than by teaching any other foreign tongue.

F. R. WELSH.

A Home Atmosphere on the De Luxe Trains

TO THE EDITOR:

The editorial in *Railway Age* of September 14 on popularizing long-distance travel hits the nail right on the head, I believe.

In my judgment, too much advertising has been done by the railroads in regard to their de luxe trains. I am sure that many people hesitate to travel in these de luxe trains because they are not sure just what is expected of them as passengers. I know of at least two cases where this is a fact.

The railroads could well afford to emphasize the home-like comfort and convenience and atmosphere of their train service, rather than emphasizing features which the average traveler does not have in his home and accordingly is not accustomed to.

I am glad to see that you have taken up this question and I hope that you will keep it agitated until something is done to correct the present conditions.

D. W. C. BECKER,
Director, Traffic Management Department,
La Salle Extension University.

Car Windows in the 19th Century—and in the Twentieth

NEW YORK.

TO THE EDITOR:

I see by your Odds & Ends column of September 21, page 693, that a well-known American citizen has for many years carried with him on his travels a jimmy, with which to open car windows; certainly a necessary implement. I notice that even the Pullman porters have at last been provided with these tools. The Pullman jimmies are of wood. Wood is the proper material. In these days of governmental interference with the tastes, habits and prejudices of sovereign American citizens, there is no telling when an officer who is searching for liquor may arrest you as a burglar. Steel jimmies are too risky.

But what I am writing for today is to ask why you do not "point with pride" to the fact that your paper had the honor of first publishing this idea? See *Railroad Gazette* of May 18, 1894, page 355.

I quote below from the issue above mentioned. Turn to May 18, 1894, and you will find the cuts which illustrated this epochal invention.

And to illustrate the very persistent way in which, notwithstanding 90 years' experience, deviltry still attaches to car windows, let me supplement this news of 35 years ago with an incident of travel only 35 days ago. On a prominent railroad leading into New York City, a passenger who got out his jimmy to open an obstinate window in a day coach, found that the maliciously ingenious designer of the car had fitted each sash with *two* spring locks, one at the left side and one at the right. To lift the sash it was thus necessary to use both hands simultaneously, to hold the locks open; and as the passenger had no third hand handy, with which to manipulate the jimmy, he gave up the attempt. The need of fresh air apparently was not specially pressing just at that time and he seems to have thought that it was not worth while to trouble another passenger to come to his aid.

And not only deviltry, but dreary perversity. On the same road some of the coaches have been fitted with brass cams and levers (at the center of the window sill) so that the most obstinate sash is forced to yield. Apparently this cam arrangement made such a radical improvement in convenience—such a striking change in the traditions of two generations of passengers—that the astonished car-shop men fainted, and ceased work after fitting the windows of only a few cars.

B. R. BLANCHARD.

MARJORIBANKS' CAR VENTILATOR

From the Railroad Gazette, May 18, 1894, page 355.

The block, Fig. 2, is placed on the window sill, either edgewise, endwise or sidewise, as may be necessary to bring the upper surface in the right position to form a fulcrum for the lever, Fig. 1. One end of the lever is then placed in position under the lifting bracket in the sash, and, the fulcrum block being properly adjusted, the brakeman, calling a passenger

Fig. 1

Fig. 2

to aid him, presses downward on the long arm of the lever with all the force he can command, and the window, nine times out of ten, will yield. Two blocks are sometimes necessary, and two should be provided, the extra cost being moderate. If there is no thumb piece on the sash, and no indentation large enough to admit the end of the bar, a stout screw may be driven into the sash.

What Should Be the Railroad Man's International Language?

GREENVILLE, PA.

TO THE EDITOR:

One of the advantages of your publication is that you discuss so many different things, and the discussion on Esperanto is one of the best we have had for a while.

You have heard from an enthusiast of the new language and from another man who desires to have the English language used as the universal language.

As one who is able, with dictionaries handy (and with plenty of time) to read ordinary, untechnical matter in French, German, Italian and Spanish, but without any knowledge of Esperanto beyond the fact that there is such an experimental language, it seems to me that there is a very good reason for a universal language, and a very good reason why it is doubtful whether one can come into successful use.

That we need such a language is evidenced by the fact that the Latin language was, until comparatively recent times, used for that purpose, it being not much beyond 150 years ago that

its use was discontinued. Why it dropped from use, allowing the new ideas of each nation to be produced in its own local language, is beyond my knowledge.

The result is that when there is an international convention of railroad men, there must be interpreters and a failure on the part of most men to get a clear idea of what is going on. That an international language is desirable seems clear.

But language is but a tool with which to convey thought. The carpenter and the machinist and the boilermaker and the upholsterer use different designs of hammers, each specialized for its own purpose and not a very successful tool in a different trade than that for which it was developed. If we look at Esperanto from the standpoint that it is a specialized tool for conveying thought internationally, it may be that we will conclude that it may become an effective tool, but there is a question. To use any national language runs us into two difficulties.

The first is that feeling of nationalism which amounts to a jealousy or perhaps even hatred of the nation to whom the language is native. The English language would probably of all languages run into the greatest amount of that feeling.

The second difficulty is the fact that a language, just as the other tools, is constantly being given minor changes, the successful ones of which remain fixed as improvements. From that standpoint, also, the English is at a disadvantage.

It is based, first of all, upon two different roots. As Sir Harry Johnson truly remarks, England is Germany's first and greatest colony, and the Anglo-Saxon roots form the powerful everyday part of the language. The Normans brought in their variety of French which became the court language, which today forms the real basis of what one may call the literary side of the present day English language.

Superimposed upon this is the great bulk of words from all sorts of languages from the seven seas which have been brought home by the sailors and traders and, when appropriate, adopted into the language as fixtures.

As a consequence, the English language is, to me, probably the most complicated of all the greater languages. It is probably able for that reason entitled to be called the language in which the most accurate description of a thought can be produced, but is difficult to learn, or at least so it seems to me when I consider the many foreigners of many, many, many nationalities whom I have known, none of them becoming so proficient that they made no errors in the use of the English, even after many years of residence here.

There is the further difficulty in that the English language, while it has been growing, has been growing in two directions at least, and it would be necessary for us to decide whether the English of England itself or our brand of English was to be the language to be taught universally.

Would the railroad man in the United States and the one in England have the same idea of the word "truck", for example? Is a "platelayer" the same as a "sectionman"?

No doubt in every language lies the barrier to the free interchange of accurate thought which is contained in our use of the word "frog", for example. It might be a thing in a track to keep the train on the track at a switch, it may be a device in the track to derail the train which passes a signal, and the wreck master has in his tool car another variety of a frog to put the engine back on the track. One word to cover three separate meanings of keeping the engine on the track, to put it off the track, and to put it back on the track again.

We are accustomed to the various uses of the word here. The circumstances under which the word is used make the meaning clear to us, but a language for international use must be clearer.

Now that this subject has been brought out for discussion, would it not be well for you to have one of your people investigate the subject.

There are probably many like myself who would be willing to study Esperanto if there is any probability that there will be an opportunity to make use of it following the progress of railroad work in foreign countires, but who would not care to bother with learning the language just for the sake of the experience.

A. M. Orr.

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Le Développement des Services Internationaux des Wagons-Lits Depuis la Guerre, by Charles Loisan. Recent railroad history in Europe and Asia from an unusual angle. The establishment and progress of the "Blue Trains," and "The Golden Arrow" without which some modern novelists would apparently be helpless, the "Simplon-Orient" and the other "de luxe" international trains are given in this article. Revue Générale des Chemins de Fer, September, 1929, p. 219-230.

Elektrische Bahnen, by D. O. Höring. History of the application of electricity to city, railroad and industrial railroad purposes with discussion of modern electric motive-power, Diesel locomotives, industrial railways, their construction, equipment and operation. Illustrations. 515 p. Pub. by Walter De Gruyter & Co., Berlin and Leipzig, Germany.

Government Ownership of Railways—A List of Publications 1917—1929. "In the preparation of this bibliography every effort has been made to include references to all the available literature on the subject—good, bad, and indifferent—for and against government ownership." Issued as Miscellaneous series Bulletin no. 49. 98 p. Pub. by Library, Bureau of Railway Economics, Washington, D. C. *Apply.*

Making Steam Locomotive Models That Actually Run, by Gene A. Day. Illustrated sketch of the hobby of A. P. Clow of the Interstate Commerce Commission. Washington Star Magazine section, September 15, 1929, p. 2.

The Texas & Pacific Railway—Part II, by Curtis G. Green. Part I of this history of the Texas & Pacific and its motive power was included in the July 13 Booklist. Baldwin Locomotives, October, 1929, p. 22-33.

Transportation in the Mississippi and Ohio Valleys. Prepared by the Board of Engineers for Rivers and Harbors, War Department and the Bureau of Operations, U. S. Shipping Board as their Transportation series no. 2. "This report is designed to give information respecting the navigable waterways of the Mississippi system, the ports and terminal facilities available for handling traffic, and the commerce over these routes. . . Owing to the large number of streams and the wide expanse of territory included within the scope of the report, it has been necessary to confine the published data to the more important physical and commercial features of the system." p. ix. Illustrations and maps. 257 p. Pub. by U. S. Govt. Print. Off., Washington, D. C., $1.25.

Periodical Articles

American Railroading in North Russia, by Maj. E. E. MacMorland. An illustrated article on problems and accomplishments. Military Engineer, September-October 1929, p. 416-427.

Diesel-Fuel-Oil Specifications. Progress report of the A. S. M. E. special research committee. "Suggested specifications" p. 765. Mechanical Engineering, October 1929, section 1, p. 765-768.

The Locomotives of the Louisville & Nashville Railroad, by Paul T. Warner. A history of motive-power which is also a history of the railroad. The reproduction of the table "Report Exhibiting Mileage and Expenses of Engines Upon Louisville and Nashville Railroad, During the Year Ending June 30, 1865" on pages 42-43 will be of particular interest. Baldwin Locomotives, October 1929, p. 39-64.

Manchuria, Promised Land of Asia, by Frederick Simpich. "Invaded by railways and millions of settlers, this vast region now recalls early boom days in the American West," p. 379. "More railway construction is under way in Manchuria now than in any other part of the world" p. 385. Many illustrations, mostly of railways. National Geographic Magazine, October 1929, p. 379-428.

Military Railroads During the Civil War, by Eva Swantner. Summary of the manuscript thesis "Northern Control of Southern Railroads During the Civil War" noted in the March 9, 1929 Booklist. Illustrated. Military Engineer, July-August, September-October, 1929, p. 310-316, 434-439.

Odds and Ends of Railroading

Seasickness Makes Railroader

Charles W. Jones of the Southern Pacific became an engineman because he suffered from seasickness. He was born and raised many miles from a railway, and started work as an oiler on a steamship. He was in this service for 15 months and was seasick every time the boat went to sea. So, not wishing to become a permanent invalid, he went to work on the railroad.

Engineman Writes Song

J. W. Small, an engineman on the Norfolk division of the Pennsylvania, realized an ambition recently, when a sentimental song written by him, entitled "My Country Sweetheart," was set to music and published by a New York music publisher. Inspired by his success, Mr. Small hopes to publish other songs in the near future, the themes for which are well outlined in his mind.

Tree Monument to Roadmaster

A leafy tribute was paid to the late George Woods, former roadmaster on the Rock Island, at Geary, Okla., recently when employees of the Panhandle division dedicated a tree "in living memory" to Mr. Woods' long railway service. Near the tree was erected a granite monument, to which a bronze tablet was attached bearing his name and his service record.

Names Is Names

The line of the Canadian National between Halifax, N. S., and St. Johns, N. B., via Moncton, is remarkable for many things, but it probably holds the record for this country, at least, in the way of unpronounceable station names, in its stretch of 278 miles. Here are some of the best of them, to roll over the tongue: Shubenacadie, Stewiacke, Memramcook, Anagance, Penobsquis, Petitcodiac, Plumweseep, Apohaqui, Passekeag, Nauwigewauk, Quispamsis. If there is any other stretch of line that can equal this record for tongue-twisters, this department would like to hear about it.

Snails Halt Locomotive

Locusts have been known to stop trains in Egypt and Tunis, and grasshoppers have done the same trick in Argentina, while the despised caterpillars have often gathered on the rails in certain American states to stall the wheels of the locomotives, but a story is being printed in the Paris press from Morocco showing that the humble snail has been successful in holding up railway traffic in the French zone there. A heavily laden freight train was on its way from Casablanca to Kourigha when it was found that the wheels of the locomotive, although they continued to revolve, made no progress. An investigation proved that the rails were covered with millions of snails. Sand placed on the tracks enabled the locomotive to plow its way through the invaders, but eventually it had to stop and wait until a relief engine arrived from Kourigha.

Milk Man Goes Exploring

Traffic through the tunnel approach to the Eads Bridge of the Terminal Railroad Association of St. Louis, Mo., was tied up for two hours recently, when Daniel Brown, milk and egg man from Licking, Mo., mistook the tunnel for a darkened street and proceeded to drive his automobile truck, filled with milk cans, into the Eighth and Clarke avenue entrance. Fortunately the tower man at Eighth and Spruce streets saw the truck enter the tunnel and he held up all trains until searchers caught up with the truck and brought it out of the tunnel. It was necessary to take the machine to the Eads Bridge in order to turn it around in the narrow tunnel. Brown's explanation was that he had made a detour to avoid a fire and thought the tunnel was an unlighted street. Physicians at the city hospital said Brown had been drinking something else than milk. Police Judge Roscan fined him $10 for trespassing on the railroad property.

He's Still Scared

At Burlington, N. J., on the Pennsylvania, the tracks of the railroad run parallel with Broad street, the main thoroughfare. On a recent Saturday night, Russell B. Evans, Trenton motorist, made a wrong turn at Broad and High streets, landing, car and all, on the tracks. Evans thought he heard the screech of a train whistle.

Jamming his foot on the accelerator he started the auto down the tracks trying to keep ahead of the imaginary train. Saturday night shoppers rubbed their eyes and stared at the machine, bumping and rumbling, first over the ties, then on the rails. Somebody called the Trenton division train dispatchers. They replied that the motorist had a "clear block," but thought it might be a good idea to get him on a more even keel. Two tires busted. Bystanders helped the perspiring car owner lift his machine from the railroad's right of way.

"Some night!" he said huskily, limping off into the gloom, after inquiring the way to the nearest repair station.

Over the Line with Dad

(D. A. Ellsworth, in Kansas City Star)

If I could be a boy again,
On the wings of fancy loose,
Free from the cares that make us men,
In my dear old Dad's caboose;
Of all there was I now recall
That made my boy heart glad,
I wish that I might go again,
Over the line with Dad.

Chum with the brakeman, laugh and joke,
Ride on the engine a while,
Washing away the grime and smoke,
Standing up straight in the aisle;
Climbing up on the counter high,
O, what a treat for a lad!
Coffee, sandwich and custard pie—
Over the line with Dad.

Sit 'way up in the lookout too,
With an eye on the jostling cars,
Climbing there in the night to view
The way of the lanterned stars;
Snuggled close to the truest friend
That ever a fellow had,
Wishing the trip might never end—
Over the line with Dad.

I grudge no one the train de luxe,
With its splendid wood and brass,
For fond I keep in memory's book,
A record none may surpass;
Ah, could I only by magic ruse,
Take any trip to be had,
I'd rather ride in that old caboose,
Over the line with Dad.

The old caboose has gone long since,
And its crew has whistled the sky,
Fancy still with its radiant tints
Illumines the days gone by!
And when God's caller comes round for me,
My heart shall be far from sad,
If only I know that I'm to go
Over the line with Dad.

NEWS *of the* WEEK

Three Sections of the Atlantic Coast Line's "The Meteor" Leaving Broad Street Station, Richmond, Va.

REPRESENTATIVE DENISON, of Illinois, has introduced in Congress two bills, in accordance with recommendations made by the Interstate Commerce Commission; H. R. 4287 to amend section 1 of the interstate commerce act to provide penalties for bribery of railroad employees and H. R. 4288, to require railroads to use steel or steel underframe passenger cars.

L. A. DOWNS, President of the Illinois Central, is announced to speak at the Railway Business Association dinner in Chicago on November 21. The program will conclude with an address by Hans V. Kaltenborn, associate editor of the Brooklyn Daily Eagle. At the business conference during the day railway budgetting will be discussed by Elmer T. Howson, Western Editor of the *Railway Age*.

AT A MEETING of the Veteran Employees' Association of the Chicago, Milwaukee, St. Paul & Pacific at Seattle, Wash., on September 19, it was decided to combine the Veteran Employees' organization with the Pioneer Club. The Pioneer Club is composed of employees who live east of the Mississippi river and it has hitherto been a separate organization. The new organization is known as the Veteran Employees' Association and has 5,572 members. The officers elected are: C. W. Mitchell, Milwaukee, Wis., president; W. D. Carrick, vice-president; and Mrs. Grant Williams, secretary-treasurer.

N. Y. R. R. Club to Discuss Containers

At the next meeting of the New York Railroad Club, to be held at the Engineering Societies' Building, 29 West Thirty-ninth street, New York, on October 18, at 8 p. m., the subject for discussion will be "The L. C. L. Company's contribution to the progress in the art of handling shipments by car and container." An illustrated lecture will be given on this subject by S. N. Kellogg, special representative, operating department, New York Central. A. W. Shaeffer, assistant marine manager, New York Central, and H. E. Stocker, resident manager, Munson Steamship Lines, will speak on "The Dawn of a New Era in Freight Handling."

New England Railroad Club Meeting

The New England Railroad Club will hold its first meeting of the 1929-30 season at the Copley-Plaza Hotel, Boston, Mass., on October 8. Dinner will be served at 6:30 p.m. and the meeting will start at 7:45 p. m. The speaker will be Kent T. Healy, assistant professor of transportation, Yale University, who will deliver an address entitled "An American View of English Railroading".

Texas Railroad Commission Report

The annual report of the Railroad Commission of Texas for 1928 comments upon grade crossing accidents, rate hearings, and motor coach regulation. It recommends that the State legislature adopt a program, extending over 5 or 10 years, to eliminate the crossings of the densely traveled highways.

It is recommended that the law be so amended as to permit any member of the commission or a designated employee, where necessary, to hold hearings and to make a record of the testimony so as to allow the commission to render its decision on the record thus made. During the year 86 public hearings were held, and 416 complaints or other matters respecting railroad rates and service were given informal docket numbers and settled.

In 1928, regulated motor coaches operated over approximately 31,000 miles of public highway and transported 4,843,224 passengers. Of these passengers none were killed or seriously injured.

Railway Fire Protection Association

The annual convention of the Railway Fire Protection Association will open at the Royal York Hotel, Toronto, Ont., at ten o'clock on Tuesday morning, October 15, the first business being the address of the president, F. R. Bradford (Boston & Maine). Other addresses at the morning session will be those of Grant Hall, vice-president of the Canadian Pacific and Franklin H. Wentworth of the National Fire Protection Association.

The list of addresses by others than members of the association includes the following: *Tuesday afternoon,* W. D. Robb, (C. N. R.); E. P. Heaton, fire marshall of the Province of Ontario; *Wednesday morning,* J. Grove Smith, fire commissioner, for the Dominion of Canada; *Wednesday afternoon,* A. R. Small, vice president of Underwriters' Laboratories.

The committee reports include the following subjects: *Tuesday afternoon,* Motor Transportation, George H. Scott, chairman; Storage of Records, J. L. Rice, chairman; Handbook, T. E. Chapman, Jr., chairman. *Wednesday morning,* Air Compressors, C. A. Thompson, chairman; Grain Elevators, George A. Bryant, chairman; Storehouses and Material Yards, E. J. Reilly, chairman. *Thursday morning,* Revision of Fuel Oil Report, E. L. Tallichet, chairman.

War Department Establishes Railway Section

Orders have been issued recently by the War Department establishing a Railway Section in the office of the Chief of Engineers, United States Army. This section is charged with the supervision of all railway work assigned to the Corps of Engineers in event of war, and the preparation of war plans for the construction, operation and maintenance of such railways. Some of the responsibilities of this section are as follows: Maintenance of contact with the commercial railway systems of the United States; the preparation of policies affecting the personnel, training, and operations of engineer railway organizations; preparation of tables of organization and equipment of railway troops; the determination of construction and maintenance requirements for military railways and the preparation of type plans and railway estimates; the preparation of studies in connection with the movement of railway artillery.

The Chief of the Railway Section is Captain Marshall J. Noyes, Corps of Engineers, who has had a number of years practical railway experience. It is understood that the Chief of Engineers contemplates giving reserve officers now assigned to railway units the opportunity of active duty training in this newly created section. This will give them an oppor-

tunity to observe the railway activities of the Office of the Chief of Engineers, and will afford an opportunity for the interchange of ideas on the problems of the Railway Section.

Cars and Locomotives Ordered

The railroads on September 1 had 31,898 freight cars on order, the Car Service Division of the American Railway Association announced on September 28. This was an increase of 22,641 cars above the number on order on September 1 last year and 13,134 cars above the same day two years ago. Of the total, 18,544 were box cars, an increase of 14,399 compared with the same date last year. Coal cars numbered 11,818, an increase of 9,474, compared with the number of such cars on order on September 1 last year. Refrigerator cars on order totaled 228, flat cars, 1,258, and other miscellaneous freight cars, 50, all being reductions under one year ago.

Locomotives on order on September 1 numbered 395, compared with 100 on the same day in 1928, 207 on September 1, 1927, and 533 on September 1, 1926.

New freight cars placed in service in the first eight months of 1929 totaled 51,680, of which box cars totaled 24,726; coal cars 18,136; flat cars 2,963; refrigerator cars 3,349 and stock cars 1,990. Other classes installed in service during that period totaled 516. New locomotives placed in service in the first eight months of 1929 totaled 474.

Ralph Modjeski Honored

Ralph Modjeski, one of America's foremost bridge builders, has been awarded the John Fritz gold medal, highest of American engineering honors, by the John Fritz Medal Board of Award, composed of 16 recent past presidents of the four national societies of civil; mining and metallurgical, mechanical and electrical engineers. The award was made for the notable achievement of Dr. Modjeski as an engineer of great bridges combining the principles of strength and beauty, and in appreciation of his distinguished scientific and industrial contributions to the art of bridge building.

Dr. Modjeski, who was born in Cracow, Poland, in 1861, and who came to this country with his parents in 1876, obtained his engineering education at the Ecole des Ponts et Chaussees in Paris. As designer, construction engineer or consultant he has been identified with many of America's most notable bridges, including the McKinley bridge over the Mississippi river at St. Louis, Mo., the Columbia river bridge at Celilo, Ore., the Keokuk bridge over the Mississippi river, the Ohio river bridge at Cincinnati, the Thames river bridge at New London, Conn., the Quebec bridge over the St. Lawrence river, the Poughkeepsie bridge over the Hudson, the Philadelphia-Camden bridge over the Delaware river and the Manhattan bridge over the East river, New York. In 1911, Dr. Modjeski received the degree of doctor of engineering from the University of Illinois. Since 1892 he has been a consulting bridge engineer in Chicago. He is a member of the National Academy of Sciences and of numerous other scientific and engineering organizations.

The Canadian Roads in August

Operating net of the Canadian Pacific for the month of August showed a decrease of $1,904,108 from August of last year, standing at $2,871,681, as compared with $4,775,789 in the corresponding month of 1928. By the same comparison, gross earnings showed a decrease of $1,842,429, while operating expenses were higher by $61,679.

For the eight-month period of the current year ending with August, gross earnings show an increase of $3,190,908 at $138,387,868, but operating expenses were higher by $4,996,825, so that net shows a decrease of $1,805,916 from the corresponding period of last year.

The following table shows the earnings, expenses and net for the month of August, and for the eight-month period ending with August:

	AUGUST		
	1929	1928	Inc.
Gross	$17,662,615	$19,505,045	*$1,842,429
Exp.	14,790,934	14,729,256	61,679
Net	$2,871,681	$4,775,789	*$1,904,108
	EIGHT MONTHS ENDING—		
	Aug. '29	Aug. '28	Inc.
Gross	$138,387,868	$135,196,960	$3,190,908
Exp.	115,266,699	110,269,874	4,996,824
Net	$23,121,169	$24,927,085	*$1,805,916

* Decrease.

Gross earnings of the Canadian National for the eight months period to the end of August, 1929, were $173,324,442 as against $170,934,671 for the corresponding period of 1928, an increase of $2,389,771 or 1.40 per cent.

During the same eight months period operating expenses were $144,190,590 as against $141,360,534, an increase of $2,829,055 or 2 per cent. Net earnings for the eight months were $29,133,851 in 1929, as against $29,573,136 in 1928, a decrease of $439,284.

For the month of August, 1929, gross earnings were $22,815,825 as against $24,429,340, a decrease of 6.60 per cent. Operating expenses during the month of August amounted to $18,225,900 as against $18,345,026, a decrease of $119,125 or 65 per cent. Net earnings during the month of August, 1929, were therefore, $4,589,924 as against $6,084,313, a decrease of $1,494,389.

The operating ratio for the eight months period ending August 31 was 83.19 per cent as against 82.70 per cent, for the same period of 1928, and for the month of August the operating ratio was 79.88 per cent as against 75.09.

Safety Congress Held at Chicago

The eighteenth annual Safety Congress of the National Safety Council was held at Chicago on September 30 to October 4 with over 630 representatives of railroads in attendance at the Steam Railroad Section sessions which convened on October 1 to 3 and over which J. E. Long, superintendent of safety of the Delaware & Hudson presided. Many interesting papers on safety were presented by officers of the various departments of railroads, the program being arranged to consider the subjects of interest to certain classes of employees at particular times. The business of the morning session of the first day was of a general nature and included reports of various committees; an address on Accident Causes and Remedies by T. H. Carrow, superintendent of safety of the Pennsylvania; and an address on Foremanship by George Opp, safety engineer of the Detroit Edison Company.

The afternoon session of the first day was devoted to mechanical department activities. E. B. Hall, general superintendent of motive power and machinery of the Chicago & North Western spoke on Mechanical Accidents—Their Causes and Remedies; J. C. Mengel, assistant to the works manager of the Altoona Shops of the Pennsylvania addressed the meeting on Safety in a Large Shop; H. C. Caswell, superintendent of locomotive shops of the Wabash at Decatur, Ill., spoke on Safety in Shop Operation; G. A. Silva, superintendent of shops of the Boston & Maine at Boston gave a talk on The Elimination of Shop Accidents; and H. L. Needham presented a paper on The Value of Close Supervision in Accident Prevention.

At the morning session of the second day, several addresses on subjects of interest to the maintenance of way department were presented. These included: The report of the Engineering committee by A. N. Reece, chief engineer of the Kansas City Southern; Maintenance of Way Accidents by R. B. Ball, assistant chief engineer of the Atchison, Topeka & Santa Fe, Safety in the maintenance of Way Department by E. H. McGovern, division engineer of the Cleveland, Cincinnati, Chicago & St. Louis at Mattoon, Ill.; Safety to Track Employees by J. R. Watt, general roadmaster of the Louisville & Nashville at Louisville, Ky.; What Boy Scouts Can Do to Reduce Railroad Accidents by Dr. George J. Fisher, deputy chief scout executive of the Boy Scouts of America; and The Surgeon's Co-Operation in Safety Contests by J. R. Nelson, chief surgeon of the Union Pacific.

Following a luncheon at which T. C. Powell, president of the Chicago & Eastern Illinois was the principal speaker, various transportation officers spoke. These included R. H. Aishton, president of the American Railway Association; F. S. Risley, general superintendent of the New York Central who spoke on Safety and Transportation; G. A. Stokes, superintendent of the Canadian National whose subject was How We Prevent Accidents in Canada; Frank Walker, trainmaster of the Illinois Central, who spoke on The Value of Safety Supervision; W. S. Carr, assistant superintendent of the New York, New Haven & Hartford whose subject was The Supervisor's Responsibility for Safety; P. O. Ellis, general yardmaster of the Missouri-Kansas-Texas, who spoke on The Best Methods of Accident Prevention for Yard Employees; and B. H. Bowman, assistant trainmaster of the Reading

who spoke on Safety of First Importance in the Discharge of Duty.

The meeting was concluded on the third morning with an address on Transportation Service Accidents by G. H. Jacobs, superintendent of the Northern Pacific and committee reports on Public Relations, Present and Future Activities and Membership.

Dedication of New Trains

The new 20-hour passenger trains of the New York Central between New York and Chicago began business on Sunday, September 29, as heretofore announced, and the regular twentieth Century Limited, westbound, leaving at 2:45 p. m., consisted of three sections. The new train, the "Commodore Vanderbilt," which follows the "Century" at 4 p. m., started from New York in the presence of a crowd of about a thousand invited guests and others. W. K. Vanderbilt, connected with the management of the road for several years past and now a director—great-grandson of the Commodore—officiated, in place of the conductor, to give the starting signal. The Terminal Red-cap orchestra furnished music prior to the departure of the train.

This is said to be the first train ever named for an individual. Albert Stone, veteran employee of the auditor's office, who was in the group, is now 94 years old, and is believed to be the oldest railroad employee in the country. He was a contemporary of the Commodore.

The eastbound "Commodore Vanderbilt" was sent out from Chicago with similar ceremonies, music being furnished by the band from the shops of the company at Collinwood, Ohio. Charles Hogan, who was engineman on some of the famous fast runs made by the New York Central in 1890-93 was at the throttle of the locomotive.

The "Golden Arrow," new 20-hour train of the Pennsylvania between New York and Chicago, was christened, on its departure from New York City by Mrs. G. A. G. Haslam, daughter of vice-president Elisha Lee. The departure of the train was attended by interesting ceremonies and music was furnished by the Sunrise Trail Band of the Long Island. Present at the ceremonies were representatives of the New York city and state governments and a large number of other public officials. After the departure of the train, officers of the road held a reception at the Pennsylvania Hotel.

Departure of the "Golden Arrow" from Chicago

The train was christened by Princess Floating Cloud, of the Winnebagoes. The princess appears in the center of the picture. The others, left to right are: A. F. MacSweeney, superintendent freight transportation; C. W. Getty, assistant general passenger agent; Major C. E. McCullough, passenger traffic manager; W. C. Higginbottom, general manager; C. G. Pennington, general passenger agent; and W. W. Burrell, superintendent of labor and wage bureau.

Departure of the "Commodore Vanderbilt" from New York

The men and women in antique costumes are employees of the traffic department of the road, dressed up for the occasion. The other persons, from left to right are: R. D. Starbuck, vice president; G. H. Ingalls, vice president; P. E. Crowley, president; W. K. Vanderbilt, director; and Albert Stone, employee of the road since 1850.

Reading Opens New Station at Philadelphia, Pa.

The new North Broad Street station of the Reading at Philadelphia, Pa., was placed in operation on September 30, at 2 p.m. While the autumn schedule of trains went into effect on September 29 with all trains to and from Philadelphia stopping at the station, the building itself was not placed in operation until after the formal opening.

Andrew W. Mellon, Secretary of the Treasury, was the principal speaker and officially opened the building. Agnew T. Dill, president of the Reading, presided and addresses were made by E. T. Stotesbury, chairman of the Reading board of directors, Mayor Mackey, of Philadelphia, Charles H. Grakelow, representing the business associations of North Philadelphia, and Secretary Mellon. The Philadelphia Chamber of Commerce also participated as well as the

Uptown Business Association, the Central North Philadelphia Business Association and the Broad Street Merchant's League. Music was supplied by the Reading Shop Band. After the exercises the ticket windows were opened and the entire facilities of the station placed in operation.

Located in the heart of North Philadelphia, the new $2,000,000 station has been erected to take care of the great increase in traffic originating in that part of the city.

The project includes all the essentials of the modern city passenger station, with all the latest facilities in the station building proper, and with vehicle entrances off the main street, parking space, sheltered train platforms to accommodate the longest trains, and connections to the city's high speed subway under Broad street.

The station building has been designed in the classic Grecian style. The Broad street front, 200 ft. long, is a Doric colonnade of Buff Indiana lime stone on a pink granite base. A large clock surmounts this supported by allegorical sculptured figures.

The building is free of any adjacent buildings and the large triangular plot of ground on its north side has been laid out in grass and shrubbery to give an attractive setting when viewed from North Broad street. The plot is 100 ft. by 200 ft.

Entering the building from Broad street through the colonnade, one descends a monumental Travertine stone stair to the large main waiting room on the same level as the tracks. The floor of this waiting room is of marble, the sidewalks are of Travertine stone imported from Italy, and the ceiling is beautifully decorated in color.

Opening from the main waiting room are all the facilities. There is a large ticket office with separate windows for all classes of tickets, waiting room for women and men, a lunch room, barber shop, telephone room, baggage room, and news stand. In addition to the lunch room on the waiting room floor level, which will have both counter and table service, there will also be a dining room on the upper or Broad street level. The lunch and dining rooms will be under the same management as the Reading Terminal Restaurant.

The interior of the station building is illuminated by specially designed fixtures. Flanking the main entrance stairway are sculptured urns which will illuminate the colored ceiling.

While it will be possible to alight in front of the building on Broad street and enter there, as previously described, in order to give proper space free of traffic congestion for vehicles entering and leaving the station or parking there, a driveway has been arranged which enters east from Broad street on the south side of the building, dropping down to the rear to the level of the main waiting room and tracks, circling the building, and rising again to form an exit to Broad street north of the building.

From this driveway there will be an entrance in the east side of the building connecting directly with the main waiting room. At this point will be located the taxi stand. To the south and rear of the building is located a parking space for the company's patrons. This is reached by the same driveway.

The building is warmed by a constant supply of temperate fresh air automatically regulated to a uniform temperature.

The train platforms, one for inbound and one for outbound trains, are reached from the main waiting room by a wide tunnel. The outbound platform is 1212 ft. long, the inbound 1065. They are of concrete of ample width to prevent crowding and are sheltered. Each platform is provided with a closed waiting room, wherein are also phone booths. To build the platforms to this length, it was necessary to reconstruct the bridges over Thirteenth and Cumberland streets, move the York street freight house and rearrange the Huntingdon street car yard tracks.

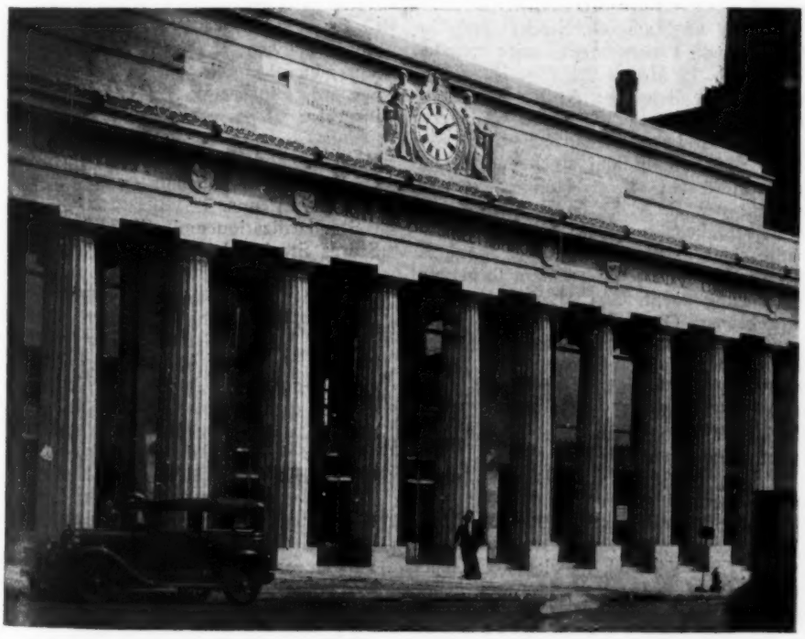
Each platform serves two tracks, the total being four. The platforms are connected at their southern end with Thirteenth street by a descending stairway. The same tunnel which leads from the waiting room to the passenger platforms, continues on and connects with the Lehigh avenue station of Philadelphia's Broad street subway.

A separate entrance from Broad street near Lehigh avenue gives access to a stairway entering the tunnel connecting the platforms with the Broad street subway. At the foot of this stairway is located an auxiliary ticket office. This will make it possible for pedestrians approaching the station from the north and patrons entering from the subway to purchase tickets here, and proceed directly to the train platforms.

In addition to the passenger tunnel, there is a large tunnel for baggage connected to the train platforms and to the station building and elevators, thus separating the handling of baggage from the passengers.

The erection of this station also made necessary an addition to the power house of the Reading on the opposite side of the tracks.

The project was designed and executed under the supervision of Clark Dillenbeck, chief engineer of the Reading, the station building being designed by Horace Trumbauer, Philadelphia architect. The building contract was divided between two Philadelphia builders; Irwin & Leighton for the station building, and the Hughes-Foulkrod Company for the station platforms, tunnels, driveways, power house, bridge changes and moving of freight house.



The New North Broad Street Station of the Reading at Philadelphia, Pa.

Purchases and Stores Division Committees

The purchases and stores division, American Railway Association, has commenced its work for the ensuing year by completing the selection of committees and the committee personnel. Two new subjects "Purchasing and Storekeeping for Motor Bus Operation" and "Capacity Loading and Prompt Handling of Company Material Cars" have been selected for study and new chairmen have been selected for most of the standing committees. The committees and their personnel follow:

General Committee: W. Davidson, (chairman), general storekeeper, I. C.; C. E. Walsh (vice-chairman), purchasing agent, Penna.; F. S. Austin, purchasing agent, Boston & Albany; J. L. Bennett, purchasing agent, C. of Ga.; G. W. Bichl-

meir, general purchasing agent, U. P.; E. A. Clifford, general purchasing agent, C. & N. W.; C. B. Hall, stores manager, Penna.; W. B. Hall, purchasing agent, D. & R. G. W.; J. U. King, general storekeeper, A. C. L.; C. C. Kyle, purchasing agent, N. P.; A. S. McKelligon, general storekeeper, S. P.; G. E. Scott, purchasing agent, M-K-T; A. L. Sorenson, manager of stores, Erie; H. C. Stevens, general storekeeper, Wab.; L. C. Thomson, manager of stores, C. N.; and C. B. Tobey, general storekeeper, L.V.

Stores Department Book of Rules: K. P. Chinn (chairman) assistant general storekeeper, S. P.; J. H. Ellis, storekeeper, C. B. & Q.; J. F. Rex, division storekeeper, U. P.; H. R. Toohey, inspector of stores, C. M. St. P. & P., and E. G. Ellenberger, general material supervisor, Penna.

Classification of Material: B. T. Adams (chairman), assistant general storekeeper, I. C; E. A. Carlson, division storekeeper, P. M; E. A. Ernst, district storekeeper, C. R. I & P; W R. Knauer, supervisor stores catalogue, Penna; C. A. Marshall, division storekeeper, C. R. R. Co. of N. J; F. J. McMahon, general storekeeper, N. Y. C; W. S. Riach, chief clerk to general storekeeper A. T. & S. F.; C. C. Smola, division storekeeper, C. M. St. P. & P; H. J. Smith, chief clerk to general storekeeper, S. P., and E. A. Clifford (chairman ex-off.), general purchasing agent, C. & N. W.

Recovery, Repairs and Reclamation of Discarded Materials — Classification, Handling and Sale of Scrap: J. C. Kirk (chairman), assistant general storekeeper, C. R. I. & P; I. C. Bon, superintendent of reclamation, Wab; John Eaton, assistant to general purchasing agent, C. P.; J. R. Enscoe, superintendent reclamation plant, N. Y., N. H. & H; W. B. Gordon, assistant general storekeeper, C. N; T. J. Hegeman, superintendent of reclamation, C. B. & Q; G. W. Lieber, superintendent of reclamation, M-K-T; D. H. Phebus, chief clerk to general storekeeper, C. M. St. P. & P; A. L. Prentice, supervisor of scrap and reclamation, N Y. C; J. A. Sims, special clerk, purchasing department, C. & N. W; W. P. Stewart, supervisor of scrap, I. C.; James Young, assistant purchasing agent, Penna., and C. B. Tobey (chairman ex-off.), general storekeeper, L. V.

Comparisons of Material Stock Reports and Store Expenses: C. H. Murrin (chairman), special accountant, I. C; O. L. Browne, assistant to purchasing agent, A. C. L; O. A. Donagan, general storekeeper, B. & M; D. V. Fraser, assistant purchasing agent, M-K-T; E. Harty, assistant general storekeeper, S. P; J. T. Kelly, general storekeeper, C. M. St. P. & P; L. Kilmer, chief accountant, C. N.; W. W. Morris, assistant general purchasing agent, Penna; L. Sutherland, general storekeeper, P. & L. E., and A. L. Sorensen (chairman ex-off.) manager of stores, Erie.

Forest Products: D. R. Elmore (chairman), assistant to general manager, Fruit Growers' Express; C. S. Burt, superintendent of ties and treatment, I. C; L. V. Guild, purchasing agent, O. S. L; F. S. Hillier, tie and timber agent, N. Y. C. & St. L; L. W. Kistler, superintendent of treating plants, St. L.-S. F; F. C. Krell, forester, Penna; A J. Kroha, assistant general storekeeper, C. M. St. P. & P; A. F. Latta, lumber buyer, C. P; J. R. McGrenara, general tie and lumber inspector, A. T. & S. F; J. E. McNelley, chief tie and lumber supervisor, A. C. L; A. J. Neault, assistant to general purchasing agent, C. & N. W.; F. V. Weisenburger, timber agent, N. P., and C. C. Kyle (chairman ex-off.), N. P.

Purchasing and Storekeeping for Motor Bus Operation: J. C. Neph (chairman), general inspector of stores, S. P; G. W. Alexander, general storekeeper, C. of Ga; P. L. Grammer, assistant purchasing agent, Penna; S. A. Hayden, chief clerk to general storekeeper, M-K-T; W. J. Hiner, purchasing agent, C. C. C. & St. L; W. M. Hinkey, district storekeeper, B. & O.; G. J. Hunter, traveling material supervisor, A. T. & S. F.; L. P. Krampf, supply agent, M. P; R D. Long, assistant general storekeeper, C. B. & Q; C. H. McGill, supply train storekeeper, N. Y. N. H. & H; Frank McGrath, traveling storekeeper, B. & M.; J. L. Sullivan, general traveling storekeeper, U. P; E. D. Toye, general storekeeper, C. N., and A. S. McKelligon (chairman ex-off.), general storekeeper, S. P.

Control of Shop Manufacturing Orders for Stock Materials: H. D. Foster (chairman), cost accounting engineer, C. B. & Q; H. P. Akin, district storekeeper, C. N; A. W. Blume, general storekeeper, St. L.-S. F; O. V. Daniels, works storekeeper, Penna; C. H. Dayton, division storekeeper, M C.; P. E. W. Goodwin, Jr., storekeeper, Fruit Growers' Express; H. M. Smith, assistant general storekeeper, N. P; H. Shoemaker, division storekeeper, B. & O., and J. U. King (chairman ex-off.), general storekeeper, A. C. L.

Control of Materials, Stocks and Co-Ordinating Procurement with Actual Needs: W. H. Morris (chairman), general storekeeper, Reading; A. R. Dale, general storekeeper, F. E. C; R. C. Harris, general storekeeper, Penna; F. G. Hawes, chief of planning and stock control bureau, C. & O; T. A. Hodges, general storekeeper, S. A. L; S. E. Keillor, district storekeeper, C. N; K. A. McDonnold, chief clerk to purchasing agent, K. C. S.; W. R. H. Mau, assistant to general purchasing agent, G. C. L.; F. G. Mole, storekeeper, O. S. L; W. S. Morehead, assistant general storekeeper, I. C.; D. B. Rivers, district storekeeper, C. M. St. P. & P; A. S. Thompson, purchasing agent and storekeeper, C. & G., and G. W. Bichlmeir (chairman ex-off.), general purchasing agent, U. P.

Pricing Methods: J. C. Jackson (chairman), general storekeeper, C. N.; J. S. Genther, general storekeeper, L. & N. E.; J. P. Kavanagh, general storekeeper, C. & O; J. P. Kimmel, district storekeeper, C. St. P. M. & O; J. K. McCann, general piece work inspector, C B. & Q; W. E Rawson, district storekeeper, S P., and J. U. King (chairman ex-off.), general storekeeper, A. C. L.

Purchasing Agents Organization, Practices and Office Records: W. W. Griswold (chairman), purchasing agent, W. & L. E; B. A. Aikens, purchasing agent, M. C.; W. E. Evans, purchasing agent, C. N; H. M. Dewart, purchasing agent, C. V.; T. J. Gallıgan, general correspondence clerk, A. T. & S. F; A. V. B. Gilbert, purchasing agent, A. B. & C; J. W. Hagerty, general supervisor, purchasing agents office, Penna; C. C. Hubbell, purchasing agent, D. L. & W; A. N. Laret, assistant to vice-president and chief purchasing officers, St. L.-S. F; R. L. Tindal, purchasing agent, N. Y. C. & St. L., and F. S. Austin (chairman ex-off.), purchasing agent, B. & A.

Stationery and Printing: C. C. Anderson (chairman), stationer, N. P; F. Blanchard, Jr., division storekeeper, B. & O; H. C. Dawson, stationery storekeeper, M. & O; Vincent Erb, stationery storekeeper, R. Co; W. W. Griswold, stationer, C. R. I. & P; J. M. Hamilton, stationery, Wab; C. Reuthinger, stationery storekeeper, M-K-T; W. R. F. Whaley, stationery storekeeper, Penna; C. S. Williams, stationery storekeeper, S. P; H. O. Wilson, stationery agent, C. P., and W. B. Hall (chairman ex-off.), purchasing agent, D. & R. G. W.

Fire Prevention: E. W. Peterson (chairman), general storekeeper, Bangor & Aroostook; A. J. Cossette, storekeeper, C. & N. W.; S. R. Proffitt, assistant to purchasing agent, W. P., and E. L. Walker, purchasing agent, A. C. & Y.

Motorized and Unified Delivery and Distribution of Materials: J. V. Miller (chairman), assistant general storekeeper, C. M. St. P. & P; R. D. Crawford, general storekeeper, G. C. L; J. C. Glenn, storekeeper, C. R. R. Co. of N. J.; P. W. Grayson, division storekeeper, T. & P; E. H. Hughes, general storekeeper, K. C. S; L. H. Johnson, local storekeeper, U. P; E. H. Landers general storekeeper, C. C. C. & St. L; G. W. Leary, supervisor stores delivery, C. & O; J. C. McCaughan, general storekeeper, H. V; A. Schipper, stores inspector, S. P; O. A. Schultz, inspector of stores, C. B. & Q; G. D. Tombs, division storekeeper, I. C.; J. W. Watkins, division storekeeper, L. V., and C. B. Hall (chairman ex-off.), stores manager, Penna.

Standardization and Simplification of Stores Stocks: L. F. Duvall (chairman), assistant general storekeeper, A. C. L.; T. E. Britt, storekeeper, B. & O.; O. T. Burleigh, traveling storekeeper, B. R. & P.; E. J. Burns, traveling storekeeper, A. T. & S. F.; W. A. Clem, assistant purchasing agent, R. Co.; H. W. Concannon, district storekeeper, S. P.; A. G. Follette, assistant chief material supervisor, Penna.; J. S. Gabriel, division storekeeper, D. & R. G. W.; W. L. Hunker, district storekeeper, C. R. I. & P.; P. C. Mayer, special buyer, purchasing department, I. C.; R. F. Welch, special assistant, stores department, T. & P.; W. W. Williams, chief of requisition bureau, N. Y. C., and G. E. Scott (chairman ex-off.), purchasing agent, M-K-T.

Stores Department Safety Practices: F. C. Warren (chairman), general store-

keeper, St. L. S. W; E. J. Clark, chief lumber inspector, C. B. & Q; E. H. Lyons, division storekeeper, C. M. St. P. & P., and H. Weindel, inspector of stores, U. P.

Terminal Railway Storekeeping: J. C. Dods (chairman), general storekeeper, K. C. T.; W. R. Culver, general storekeeper, P. M.; W. W. Davis, pu chasing agent, and storekeeper, A. T. & S. F; J. T. O'Dea, assistant to president and purchasing agent, P. & P. U; E. H. Polk, district storekeeper, S. P; H. A. Smith, purchasing agent, T. R. Ass'n. of St. L; C. E. Swanson, storekeeper, C. B. & Q; C. W. Yeamans, purchasing agent, C. & W. I; H. J. Zimmerman, storekeeper, Penna., and H. C. Stevens (chairman ex-off.), general storekeeper, Wab.

Capacity Loading and Prompt Handling of Company Material Cars: Grover Wonnell (chairman), storekeeper, Penna.; F. E. Cragin, general storekeeper, L. A. & S. L; J. B. Flannery, general foreman, I. C; J. H. Geary, superintendent of stores, Erie; B. W. Griffith, general storekeeper, N. Y. C.; J. C. MacDonald, district storekeeper, C. M. St. P. & P.; H. P. McQuilkin, assistant purchasing agent, B. & O.; C. S. Palsgrove, district storekeeper, C. & N. W; T. H. Ryan, assistant purchasing agent, Wab; F. W. Taylor, purchasing agent, S. P; F. C. Turner, traveling storekeeper, C. & A., and L. C. Thomson (chairman ex-off.), stores manager, C. N.

Purchasing, Storage and Distribution of Equipment and Supplies Used in Dining Cars, Hotels and Commissaries: H. N. Mellor (chairman), commissary buyer, Penna.; M. E. Baile, district storekeeper, M. P.; Clyde Cocke, purchasing agent, N. & W.; G. A. Goerner, traveling storekeeper, C. B. & Q.; H. A. Hansen, superintendent of dining car and hotel department, U. P.; L. M. Jones, superintendent of sleeping and dining cars, C. M. St. P. & P.; T. M. McKeown, assistant general purchasing agent, C. P.; C. K. Reasor, assistant manager of stores, Erie; T. K. Russell, assistant superintendent of dining service, I. C., and J. L. Bennett (chairman ex-off.), purchasing agent, C. of Ga.

Training and Selection of Employees in Purchasing and Stores Departments: H. M. Rainie (chairman), assistant purchasing agent, B. & M.; A. Aiken, office manager, purchasing department, Penna.; V. E. Elliott, traveling storekeeper, N. & W.; J. L. Irish, general storekeeper, O.-W. R. R. & N. Co.; J. S. Matthias, general storekeeper, T. & P.; H. A. Paar, assistant general storekeeper, M. C.; E. G. Roberts, division storekeeper, C. R. I. & P.; W. Robertson, traveling storekeeper, C. & E. J., and C. E. Walsh (chairman ex-off.), purchasing agent, Penna.

Promotion of Conservation Methods in Use of Materials: U. K. Hall, (chairman), general supervisor of stores, U. P.; J. J. Bennett, purchasing agent, I. C.; E. B. DeVilbiss, assistant stores manager, Penna.; E. S. Marsh, general storekeeper, W. & L. E.; A. W. Munster, purchasing agent, B. & M.; J. G. Stuart, general storekeeper, C. B. & Q., and G. E. Scott. (chairman ex-off.), purchasing agent, M-K-T.

Traveling Engineers' Exhibit

The largest exhibition of railway equipment held in conjunction with the annual Fall convention of mechanical department officers in Chicago was that at the Traveling Engineers' Convention, September 24 to 27, inclusive. This display of railway equipment and supplies largely pertaining to locomotive use was provided under the auspices of the Railway Equipment Manufacturers' Association, the newly-elected officers of which include: President, C. M. Hoffman, Dearborn Chemical Company, Chicago; first vice-president, L. B. Rhodes, Vapor Car Heating Company, Washington, D. C.; second vice-president, Richard Welsh, Nathan Manufacturing Company, Chicago; secretary-treasurer, F. W. Venton, Crane Company, Chicago. The executive committee with the newly-elected members consists of C. F. Weil, American Brake Shoe & Foundry Co., Chicago; M. K. Tate, Lima Locomotive Works, Lima, Ohio; E. H. Weaver, Westinghouse Air Brake Company, Chicago; R. R. Wells, Hunt-Spiller Manufacturing Corporation, South Boston, Mass.; Thomas O'Leary, Johns-Manville Corporation, New York, and R. T. Peabody, Air Reduction Sales Company, New York.

A total of 126 companies were represented in the exhibition hall. The names of these companies, products on exhibition and representatives in attendance are as follows:

Air Reduction Sales Company, New York.—Welding and cutting apparatus and supplies, carbide railroad lamps, porto lights and handy lamp. Represented by B. N. Law, R. T. Peabody, J. F. Callahan and J. W. Kenefic.

Alemite Corporation, Chicago.—Alemite for railroad lubrication. Represented by C. A. Fine, J. H. Karow and N. F. Kamen.

American Arch Company, Inc., New York.—Locomotive arch brick. Represented by Thomas Mahar, Thomas Ferguson, A. M. Sucese, George Wagstaff, G. M. Bean, W. E. Salisbury, J. D. Brandon and E. E. Mulcahy.

American Brake Shoe & Foundry Co., Chicago.—Brake shoes. Represented by J. W. Waters, L. R. Dewey, H. W. Hurst, F. P. Biggs, C. F. Weil and S. Conway.

American Locomotive Company, New York.—Power-throttle operating gear, reverse gear, steam-pipe casing, models of four-wheel and two-wheel outside-bearing engine truck, bushing and cylinder material. Represented by N. C. Naylor, Hunter Michaels, W. S. Morris, Robert Brown and Arthur Haller.

American Steel Foundries, Chicago.—Radial coupler and cast-steel yoke and models of roller-bearing unit, truck, key coupler yoke, adjustable brake heads and reversible-fulcrum brake beams. Represented by W. A. Stearns, W. G. Wallace, C. V. Broadley, C. E. Grigsby and W. C. Walsh.

American Throttle Company, Inc., New York.—Feedwater heater, feedwater pump, exhaust-steam injector, boiler feed pump and multiple throttle. Represented by F. A. Schaff and R. M. Ostermann.

Ar-An-Ess Manufacturing Company, Chicago.—Locomotive fire doors. Represented by C. B. Royal.

Graham-White Sander Corporation, Roanoke, Va.—Sanders and spreaders. Represented by W. H. White and W. L. Ranson.

Aseco Corporation, Chicago.—Force-feed lubricator and journal lubricators. Represented by J. A. McNulty and J. J. Hennessy.

Ashton Valve Company, Chicago.—Safety valves, steam and air gages, recording gages, recording attachments for double-ram wheel presses, dead-weight gage testers and driving wheel quartering gages. Represented by J. F. Gettrust, H. O. Fettinger and C. Garton.

Baldwin Locomotive Works, Philadelphia, Pa.—Photographs of modern locomotives. Represented by Charles Riddell, C. E. Hale, W. H. Evans, Henry Blanchard and C. H. Gaskill.

Barco Manufacturing Company, Chicago.—Power reverse gear, automatic smokebox blower fitting, metallic engine and tender connections, for steam, air, oil and water, metallic car steam-heat connections, reservoir joints and lubricated plug valves. Represented by F. N. Bard, C. L. Mellor, F. H. Stiles, A. S. Lewis, W. J. Behlke, C. O. Jenista, F. B. Nugent, L. E. Livingston and J. S. McLean.

Bethlehem Steel Company, Bethlehem, Pa.—Catalogues and photographs. Represented by I. C. Jordan, F. M. Morley, R. S. Folk and G. W. Armstrong.

Bird-Archer Company, New York.—Blow-off equipment and boiler water chemicals. Represented by T. A. Peacock, J. J. Clifford, C. J. McGurn, A. C. Melville, R. A. Wilsey, J. L. Callahan, P. G. Jones, J. C. Hutton, F. K. Tutt, W. E. Ridenour and L. F. Wilson.

The Borden Company, Warren, Ohio.—Power drive and pipe-threading and cutting tools. Represented by V. M. Gaspar.

The Bradford Corporation, Chicago.—Front-end throttle and back head connecting throttle. Represented by E. J. Barnett, B. C. Wilkinson, A. C. Bodeau and J. C. Keene.

Morris B. Brewster, Inc., Chicago, and Anthes Force Oiler Company, Ft. Madison, Ia.—Piston-rod and valve-stem packing, locomotive oilers and motor mica. Represented by M. B. Brewster, G. P. Anthes and John T. Ash.

Burnside Steel Foundry Company, Chicago.—Locomotive steel castings, roller side bearings, locomotive tools, sill steps and shaker bars. Represented by W. H. Moore, and W. C. Bladin.

Central Valve Manufacturing Company, Chicago.—Brass globe card, angle valve, gage cocks, special locomotive valves, blow-off cocks, wash-out plugs and non-ferrous castings. Represented by J. E. Brown, C. F. Pigott and C. J. Murphy.

C. F. Church Manufacturing Company, Holyoke, Mass.—Water-closet seats. Represented by W. W. Baer, W. J. Erskine and W. J. O'Connor.

Clark Manufacturing Company, Philadelphia, Pa.—Piston parters, frame-bolt jacks and wheel pivot. Represented by H. J. Smith.

J. S. Coffin, Jr., Company, Englewood, N. J.—Feedwater heating system. Represented by J. S. Coffin, Jr., Paul Willis, W. T. Comley, E. L. Schellens, J. W. Usherwood, C. S. Edgerle, H. Hague, E. E. Clothier and R. W. Smith.

Coffing Hoist Company, Danville, Ill.—Hoists and jack. Represented by F. W. Coffing.

Consolidated Ashcroft Hancock Company, Chicago.—Inspirators, boiler checker, globe and angle valves, water columns, water-glass cocks, steam and air gages and safety valves. Represented by W. H. Williston, C. L. Brown, J. S. Smith, J. H. Bush, P. H. Ryan, J. P. Walsh and C. W. Corning.

Corley-DeWolfe Company, Elizabeth, N. J.—Fittings. Represented by R. A. Corley and H. E. Corley.

Crane Company, Chicago.—Plumbing fixtures, valves and locomotive fittings. Represented by F. W. Venton, H. J. Bartlett, J. C. Cole and E. L. Rutherford.

Crosby Steam Gage & Valve Co., Chicago.—Safety valves, recorder for hydraulic presses, whistler, dead-weight gage tester, fluid pressure scales, locomotive blow-off valve and steam-engine indicator. Represented by E. W. Zimmerman.

Cut-Off & Speed Recorder Corp., New York.—Locomotive valve pilots and recorders. Represented by J. L. Bacon, F. D. Welden, C. F. Pennypacker and S. L. Davidson.

Dearborn Chemical Company, Chicago.—Feedwater treaters, feedwater treatment and motor oil. Represented by R. F. Carr, C. M. Hoffman, I. H. Bowen, W. H. Kenney, L. P. Bowen, H. P. Ross, F. B. Horstmann, S. E. Morse, J. W. Nutting, Nelson Dunn, A. J. Dalton, R. Q. Milnes, L. D. Brown and C. E. Baty.

Detroit Lubricator Company, Detroit, Mich.—Mechanical oiler with thermostatic heat control, automatic feed adjuster for mechanical oilers, pendulum-type automatic flange oiler, locomotive lubricators and transfer filler. Represented by S. A. Witt, E. F. Milbank, C. E. Sperry and W. D. Knox.

Dri-Steam Valve Sales Corporation, New York.—Locomotive stop valves, locomotive throttle valve, automatic non-return valve and angle-type stop valve. Represented by M. M. Milton and A. L. Rhodes.

The Duff-Norton Manufacturing Company, Pittsburgh, Pa.—Power jack, combining air and power operation, empty-car high-speed screw jack, self-lowering and foot lift. Also a complete line of railroad jacks. Represented by E. E. Thulin and D. F. Evans.

Durametallic Corporation, Kalamazoo, Mich.—Packing and wheel-machining apparatus. Represented by C. C. Hall, J. M. Brandish and Herbert Lewis.

The Edna Brass Manufacturing Company, Cincinnati, Ohio.—Mechanical lubricator, air-operated cylinder cock, water column, rigid water gages, boiler check for feedwater pumps, fire extinguisher, coal sprinkler, automatic air-pump oiler, air manifold, oil burners, gage cocks. Represented by E. O. Corey, F. S. Wilcoxen, C. B. Randall, William Beck, E. F. O'Connor, H. A. Glenn and B. I. Kaufmann.

Electro-Chemical Engineering Corporation, Chicago.—Model locomotive boiler showing Gunderson process for the prevention of corrosion. Represented by L. O. Gunderson, O. W. Carrick and C. G. Lunz.

Firebox Corporation, Cleveland, Ohio.—Air-cooled grates for locomotives. Represented by J. S. Thompson, M. J. Bernet and M. P. VanWoert.

The J. B. Ford Company, Wyandotte, Mich.—Alkaline cleaning compound for cleaning locomotive parts and removing grease spots from freight-car floors. Represented by C. S. Tompkins.

Franklin Railway Supply Company, New York.—Car connection, fire-door, power reverse gears,

adjustable wedge, sleeve joint, flexible joint, driving box lubricators (narrow and wide types). Represented by W. H. Coyle, J. L. Randolph, C. W. F. Coffin, H. M. Evans, Paul Weiler, James McLaughlin, John Talty, T. P. Whelan, F. M. Ball, S. D. Rosenfelt, C. J. Buck, R. F. DeMott, W. T. Lane and T. L. Reed.

Galena Oil Corporation, Franklin, Pa.—Lubricants. Represented by E. V. Eubank, E. J. Anderson, D. L. Eubank and R. J. McQuade.

Garlock Packing Company, Palmyra, N. Y.—Mechanical packings. Represented by R. T. Ramshaw and J. F. Franey.

Garratt-Callahan Company, Chicago.—Boiler preservative. Represented by A. H. Baker, J. G. Barclay, W. F. Gaspers, H. M. Gray and A. H. Hawkinson.

Gibbs Grease Cellar Plate Company, Chicago.—Grease cellar plate. Represented by W. L. Gibbs.

Henry F. Gilg, Pittsburgh, Pa.—Valve for wash-out and fill-up. Hollow, rigid and flexible stays of all kinds, rolled hollow staybolt steel. Represented by H. F. Gilg.

Gold Car Heating & Lighting Co., Brooklyn, N. Y.—Pressure regulators, starting valve, steam-hose couplers, end train-line valve, vapor valve and automatic drain valve for air pumps. Represented by R. L. Belknap and A. D. Stuver.

Goodall Rubber Company, Philadelphia, Pa.—Air hose, steam hose, water hose, suction hose and semi-metallic squirt and heat resisting hose. Represented by G. B. Wood and C. L. Butler.

Grip Nut Company, Chicago.—Lock nuts, holding nuts, unit nuts and locomotive nuts. Represented by W. E. Sharp, L. W. Kass and J. H. Sharp.

Gustin-Bacon Manufacturing Company, Kansas City, Mo.—Locomotive adjustable cab seats, coal-sprinkler hose, throttle-rod stuffing boxes, air-pump strainers and brake-lever badge plates. Represented by W. E. Davis, W. L. Trout, G. R. Miller and A. L. Gustin, Jr.

The Hanna Stoker Company, Cincinnati, Ohio.—Locomotive stoker model. Represented by W. T. Hanna and S. K. Witt.

Hoofer Manufacturing Company, Chicago.—Locomotive flange oiler. Represented by C. F. Hoofer and C. E. Keever.

Hulson Grate Company, Inc., Keokuk, Ia.—Locomotive grates. Represented by A. W. Hulson, J. W. Hulson, E. E. Bergman and H. N. Gardner.

Hunt-Spiller Manufacturing Corporation, South Boston, Mass.—Cylinder packing rings, locomotive castings, valve bushings, valve packing, crosshead shoes, outer rod bushings, hub liners, and piston bull rings. Represented by J. G. Platt, V. W. Ellet, E. J. Fuller, R. R. Wells, A. W. Lampton, F. Hartman and D. Hall.

Huron Manufacturing Company, Detroit, Mich.—Washout and arch tube plugs and bushings. Represented by H. N. Reynolds, J. M. Borrowdale, E. H. Willard and W. H. Bentley.

International Correspondence Schools, Scranton, Pa.—Represented by E. M. Sawyer and H. T. Pottinger.

Jenkins Brothers, Chicago.—Bronze and iron valves, discs, sheet packing and gage glasses. Represented by George Royal.

Johns-Manville Corporation, New York.—Pipe insulation, metallic packing, motor-bus brake blocks, smoke jacks, locomotive packings, plant packings, locomotive front-end tape, reverse gear packing cups, pipe wrapping, high temperature cements, truss plate flooring, car flooring, magnesia boiler lagging, rock wool, stone, felt and mill board. Represented by C. S. Clingman, J. C. Younglove, T. O'Leary, Jr., C. D. Johnson, C. M. Patten, R. J. Offutt, L. E. Parker and C. E. Holland.

Joyce-Cridland Company, Dayton, Ohio.—Air-motor-driven hoists and railroad jacks. Represented by H. Brock, H. Brown, C. N. Bunnell, A. S. Beattys and O. H. Sneed.

Leslie Company, Lyndhurst, N. J.—Steam-heat reducing valves, pressure regulators, pump regulators and self-cleaning strainers. Represented by S. Inglis Leslie, J. A. DeLong and O. C. Keckley.

Lima Locomotive Works, New York.—Pictures of super-power steam locomotives. Represented by H. W. Snyder, A. S. Steinmetz and M. K. Tate.

The Locomotive Finished Material Company, Atchison, Kan.—Bull ring packing, packing rings, blow-off muffler, floating-bushing driving box, cast-steel spring hangar (rough casting), casting of steel pipes for locomotive and booster. Represented by R. L. McIntosh, G. W. Taylor and E. J. Purcell.

Locomotive Firebox Company, Chicago.—Thermic syphons. Represented by G. M. DeGuire, A. A. Taylor, L. R. Pyle, John Baker, C. A. Seley, C. M. Rogers, B. E. Larson, R. A. Carr, H. D. Cameron, T. F. Klein, E. J. Reardon, Fred Bramley, M. A. Foss, James Barnett and A. M. Wheeler.

Charles R. Long Company, Louisville, Ky.—Paints, lacquers and varnishes. Represented by M. H. Oaks, J. S. Lemley and C. R. Long, Jr.

The Lunkenheimer Company, Cincinnati, Ohio.—Valves. Represented by H. J. Evans and K. B. Litzelman.

MacLean-Fogg Lock Nut Company, Chicago.—Lock nuts. Represented by J. A. MacLean, J. W. Fogg, J. A. MacLean, Jr., and W. G. Willcoxson.

Mall Tool Company, Chicago.—Flexible-shaft grinders and polishers. Represented by J. N. Gallagher.

J. F. May Manufacturers Agent, Chicago.—Metal art reproductions and metal novelties for advertising purposes. Represented by J. F. May.

W. H. Miner, Inc., Chicago.—Roller side bearings and bolster center locking pins, safety hand brakes and gear. Represented by B. S. Johnson, A. P. Withall and A. G. Peterson.

Monarch Packing & Supply Co., Chicago.—Mechanical packings. Represented by C. C. Humberstone, Oscar Funk and S. MacDole.

Nathan Manufacturing Company, Chicago.—Mechanical lubricators, low-water alarms, water column and gage cocks. Represented by Richard Welsh, W. Walsh, J. A. Kelley, Fred Edhret, C. J. Banning, G. Harris and F. Davren.

National Railway Devices Company, Chicago.—Radial fire door with automatic closer. Represented by J. G. Robinson and E. J. Gunnison.

National Aluminate Corporation, Chicago.—Two glass boilers, water motor for developing power to drive pump and chemical proportioner. Represented by H. W. Shaw, T. D. Windes and R. V. Lucas.

National Malleable & Steel Castings Co., Cleveland, Ohio.—Couplers and parts, friction draft gears, coiled spring journal boxes and parts, cast steel yokes, engine coupler pockets, flangeless-body center plates, wrecking hooks, cast-steel steam-shovel chain and locomotive chain. Represented by F. E. Moffett, J. F. Hutson and T. W. Aishton.

National Tube Company, Pittsburgh, Pa.—Locomotive tubes and scale-free and copper-bearing pipe. Represented by J. W. Kelly and P. J. Conrath.

The New York Air Brake Company, New York.—Hose couplings, joint piston-packing rings, brake-cylinder protectors, single-car testing devices, triple-valve gaskets and models of various air-brake devices. Represented by L. K. Sillcox, J. D. Cartin, C. A. Campbell, L. W. Sawyer, G. Kleifges, C. B. Miles, G. A. Allen, C. B. Lovell, F. A. Geister, J. H. Smith, W. J. Elliott, A. Kuelick and H. T. Wentworth.

Oakite Products, Inc., New York.—Cleaning materials, paint stripping materials, model of air-pump cleaning by vapor system. Represented by L. B. Johnson, S. A. Wood, Jr., C. E. Barber, C. A. Peterson and R. E. Wright.

Oaklomac Company, Louisville, Ky.—Limited cut-off starting valves and piston type washout and flow-off valves. Represented by M. H. Oaks, J. S. Lemley and C. R. Long, Jr.

Ohio Injector Company, Chicago.—Injectors, hydrostatic and mechanical lubricators, fire-jet low-water alarm, boiler checks, valves, transfer filler, multiple container and water-glass protector. Represented by A. C. Beckwith, F. B. Farnsworth, N. M. Barker, C. V. Welhoelter and C. G. Sauerberg.

Okadee Company, Chicago.—Blow-off muffler and valves, tender-hose coupler, water-glass protector, atomizing lubricator, front-end hinges, quick-opening blower valve and steam-chest relief valve. Represented by A. G. Hollingshead, C. W. Ploen, J. M. Monroe, C. G. Learned, G. P. Dirth, G. E. Johnson and W. H. Heckman.

The Oxweld Railroad Service Company, Chicago.—Cutting and welding equipment, chromium-plated pins, bushings and head-light reflectors, and carbide inspection lamps. Represented by G. M. Crownover, I. J. Saelens, H. W. Schulze, T. E. Hilton and J. G. Tawse.

Paige & Jones Chemical Co., New York.—Reception booth. Represented by F. O. Paige, C. B. Flint, F. O. Paige, Jr., and R. E. Falkinburg.

Paxton-Mitchell Company, Omaha, Neb.—Metallic piston-rod packing. Represented by J. L. Paxton, H. J. Molloy and J. J. Keliher.

The Pilliod Company, New York.—Locomotive valve-gear model. Represented by W. H. Bellmaine and Frank Fisher.

Pilot Packing Company, Chicago.—Packing. Represented by R. N. Sinkler and Joseph Sinkler.

The Pocket List of Railroad Officials, New York.—Literature. Represented by J. Alexander Brown and B. J. Wilson.

The Pyle-National Company, Chicago.—Turbo generators, turbine pumps, floodlights, locomotive headlights and back-up lamps, plugs and receptacles, safety switches, vapor-proof fittings, locomotive fittings and cab fixtures. Represented by J. W. Johnson, J. A. Amos, William Miller, G. E. Haas, Walter Smith, Walter Jansen, W. A. Ross, William East and J. V. Baker.

Rees Manufacturing Corporation, Pittsburgh, Pa.—Automatic soot blower. Represented by A. G. Schneider, W. R. Gellatly and J. M. Stewart.

Reliance Machine & Stamping Works, Inc., New Orleans, La.—High-pressure grease appliance for locomotive connecting-rod lubrication. Represented by E. B. Norman, G. A. Pettit, H. C. Manchester, G. A. Turner and F. J. Kearney.

Sargent Company, Chicago.—Water column, three-face gage, two-seat gage cocks, blower valves, gaskets, water-glass protectors, steam gages and pressure gages. Represented by L. L. Schultz.

William Sellers & Co., Inc., Philadelphia, Pa.—Exhaust feed-water-heater equipment. Represented by P. E. Raymond, J. R. New, T. J. Vallance and J. B. Davis.

Sheafe Engineering Company, Chicago.—Bronze-bushed air-hose couplings. Represented by Ralph Sheafe.

Simmons-Boardman Publishing Company, New York.—Copies of Railway Mechanical Engineer, *Railway Age* and Airway Age. Represented by J. M. Rutherford, R. E. Thayer, E. L. Woodward, H. C. Wilcox, D. A. Steel, H. A. Morrison, H. C. McCandless and R. E. Beauchamp.

Spring Packing Corporation, Chicago.—Spring journal-box packing and renovation plants for packing and oil. Represented by J. P. Landreth, J. S. Hearons, W. H. Davis, W. M. Gibbs and L. A. Rowe.

Standard Auto-Tite Company, Pittsburgh, Pa.—Metallic steam-heat connection between coaches, flexible metallic connection for air, steam, water, oil and gasoline. Represented by A. M. Frauenheim and E. H. Mattingley.

The Standard Locomotive Equipment Company, Toledo, Ohio.—Locomotive fire doors. Represented by C. J. Pilliod, A. P. Pilliod and G. W. Isaac.

Standard Oil Company (Indiana), Chicago.—No exhibit. Represented by E. F. Tegtmeyer, E. G. Lowe, H. D. VanValin, H. Quarum, F. G. Bowman, C. J. Henry, G. Kemme, J. J. Plummer, R. F. Dudley, R. J. Ronan and J. P. Wilsey.

Standard Oil Company of Louisiana, New Orleans, La.—Railroad lubricants, motor lubricants and aviation oil. Represented by W. H. Booth and H. C. Ferrell.

Standard Oil Company of New Jersey, New York.—Railroad lubricants, motor lubricants and aviation oil. Represented by W. F. Walsh, R. A. Greene, and F. C. Langdon.

Standard Stoker Company, Inc., New York.—Working models of stoker and sheet coal pusher, literature and other descriptive matters. Represented by F. P. Roesch, H. S. Mann, A. L. Whipple, R. Schlacks, F. C. Pickard, C. T. Hansen, L. Sweeney, H. Carmer, T. L. Capps and M. F. Robertson.

Sunbeam Electric Manufacturing Company, Evansville, Ind.—Headlights, headlight turbo-generators, train-control turbo-generators, drain valves and relief valves. Represented by J. H. Schroeder and C. E. Kinnaw.

The Superheater Company, New York.—Locomotive superheaters, feedwater heater, exhaust-steam injector and centrifugal boiler feed pump. Represented by F. A. Schaff, G. E. Ryder, R. M. Ostermann, H. B. Oatley, C. A. Odell, N. T. McKee, R. R. Porterfield, Bard Browne, C. A. Brant, E. A. Averill, L. H. A. Weaver, L. E. W. Bailey, H. C. Bell, W. A. Buckbee, C. H. David and G. L. Dolan.

The Swanson Company, Chicago.—Locomotive gage holders. Represented by O. W. Swanson.

T-Z Railway Equipment Company, Chicago.—Piston and valve-stem packing, cylinder cocks, blow-off valves, tank valves and strainers, blower nozzles, smoke-preventer nozzles, washout plugs, drifting valves, driving-box cellars and sanders. Represented by G. S. Turner, F. G. Zimmerman and F. J. Kearney.

The Texas Company, Chicago.—Railway lubricants. Represented by J. L. Lavalle, Ed. Wegner, J. A. Woods, F. S. Moody and F. S. Freeman.

Union Asbestos & Rubber Company, Chicago.—Asbestos materials. Represented by J. H. Kuhns and O. J. Rudolph.

Union Draft Gear Company, Chicago.—Friction draft gear. Represented by J. E. Tarleton, J. A. King, O. C. Heckart and A. Lerch.

The United States Metallic Packing Company, Philadelphia, Pa.—Metallic packings for piston rods, valve stems and air pumps; sanders and force-feed lubricators. Represented by H. E. Hyslop and J. T. Luscombe.

The United States Chromium Corporation, Pittsburgh, Pa.—Chromium-plated locomotive guide bar, king pin, knuckle pin, crank pin and head-light reflector. Represented by Dr. R. J. Piersol.

Vapor Car Heating Co., Inc., Chicago.—Thermostatic control, metallic steam conduits, steam-hose couplers, roundhouse and yard flexible steam joints, locomotive reducing valves and steam valves. Represented by J. E. Buker, L. B. Rhoades, L. H. Gillick, N. F. Burns, E. E. Smith and P. B. Parks.

Viloco Railway Equipment Company, Chicago.—Pneumatic whistle operator, locomotive exhaust pipe, improved pneumatic sander, vacuum bell ringer, uncoupling-lever attachment and automatic rail washer. Represented by A. G. Hollingshead, C. G. Learned, G. P. Dirth, J. M. Monroe, C. W. Ploen, G. E. Johnson and W. H. Heckman.

Walworth Company, New York.—Brass globe and angle valve, gate valves, pipe unions, pipe fittings, pipe wrenches, pipe and other tools. Represented by W. C. Mattox, C. W. Watson, W. J. Moran, Leslie DeGroot and E. Strouvelle.

Westinghouse Air Brake Company, Wilmerding, Pa.—Brake-cylinder protector, variable auxiliary release valve, pneuphonic horns and steel air valves and seats. Represented by E. H. Weaver and J. R. Holtom.

Whiting Corporation, Harvey, Ill.—Locomotive mover, stoker and pictures. Represented by H. K. Christie and F. P. Walsh.

Worthington Pump & Machinery Corp., Harrison, N. J.—Open type locomotive feedwater heater. Represented by J. E. Buckingham, T. C.

McBride, J. L. Lammedee, D. S. Ellis, J. F. Cosgrove, R. G. Kelley, S. Brownlee, George B. Bourne and G. R. Mulqueeney.

Meetings and Conventions

The following list gives names of secretaries, date of next or regular meetings and places of meetings.

AIR BRAKE ASSOCIATION.—T. L. Burton, Room 5605, Grand Central Terminal Building, New York City. Next meeting, Minneapolis, Minn. Exhibit by Air Brake Appliance Association.

AIR BRAKE APPLIANCE ASSOCIATION.—Fred W. Venton, Crane Company, 836 So. Michigan Blvd., Chicago. Meets with Air Brake Association.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—J. D. Gowin, 112 W. Adams St., Chicago.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, 332 S. Michigan Ave., Chicago. Next meeting, April, 1930, Daytona Beach, Fla.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—J. Rothschild, Room 400, Union Station, St. Louis, Mo. Next convention, 1930, Minneapolis, Minn.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, Supt. Dining Car Service, Monon Route, Chicago. Next meeting, October 8-10, Mount Royal Hotel, Montreal, Canada.

AMERICAN ELECTRIC RAILWAY ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York.

AMERICAN RAILROAD MASTER TINNERS', COPPERSMITH'S AND PIPE FITTERS' ASSOCIATION.—C. Borchert, 202 North Hamlin Ave., Chicago.

AMERICAN RAILWAY ASSOCIATION.—H. J. Forster, 30 Vesey St., New York, N. Y.
Division I.—Operating. J. C. Caviston, 30 Vesey St., New York, N. Y.
Freight Station Section.—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago.
Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York.
Protective Section.—J. C. Caviston, 30 Vesey St., New York.
Safety Section.—J. C. Caviston, 30 Vesey St., New York.
Telegraph and Telephone Section.—W. A. Fairbanks, 30 Vesey St., New York. Next convention, Sept. 16-19, 1930, Royal York Hotel, Toronto, Ont.
Division II.—Transportation.—G. W. Covert, 431 South Dearborn St., Chicago.
Division III.—Traffic.—J. Gottschalk, 143 Liberty St., New York.
Division IV.—Engineering.—E. H. Fritch, 431 South Dearborn St., Chicago, Ill. Next meeting March 11-13, 1930, Palmer House, Chicago. Exhibit by National Railway Appliances Association.
Construction and Maintenance Section.—E. H. Fritch. Next meeting, March 11-13, 1930, Palmer House, Chicago.
Electrical Section—E. H. Fritch. Next meeting, October 30, 1929, Grand Central Terminal, New York.
Signal Section.—H. S. Balliet, 30 Vesey St., New York. Next meeting, March 10-11, 1930, Stevens Hotel, Chicago.
Division V.—Mechanical.—V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill. Annual convention, June 18-25, 1930, Atlantic City, N. J. Exhibit by Railway Supply Manufacturers' Association.
Equipment Painting Section.—V. R. Hawthorne, 431 South Dearborn St., Chicago. Next convention, 1930, Chicago. Exhibit by Supply Men's Association.
Division VI.—Purchases and Stores.—W. J. Farrell, 30 Vesey St., New York, N. Y. Annual convention, June, 1930, Atlantic City.
Division VII.—Freight Claims.—Lewis Pilcher, 431 South Dearborn St., Chicago, Ill. Next meeting, June, 1930, Seattle, Wash.
Division VIII.—Motor Transport.—George M. Campbell, American Railway Association, 30 Vesey St., New York, N. Y. Next meeting, November 12-15, Royal York Hotel, Toronto, Canada.
Car Service Division.—C. A. Buch, 17th and H Sts., N. W., Washington, D. C.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W. Ry., 315 N. Waller Ave., Chicago. Annual convention, October 15-17, 1929, Roosevelt Hotel, New Orleans, La. Exhibit by Bridge and Building Supply Men's Association.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—E. L. Taylor, Asst. to Exec., Vice-Pres., N. Y., N. H. & H., New Haven, Conn. Semi-annual meeting, December 5-6, 1929, Hotel Sherman, Chicago. Annual meeting, June 18-20, Hotel Duluth, Duluth, Minn.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in co-operation with the American Railway Association, Division IV.—E. H. Fritch, 431 South Dearborn St., Chicago. Annual meeting, March 11-13, 1930, Palmer House, Chicago. Exhibit by National Railway Appliances Association.

AMERICAN RAILWAY MAGAZINE EDITORS ASSOCIATION.—Miss Page Nelson Price, Norfolk & Western Magazine, Roanoke, Va.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C., M., St. P. & P. R. R., 11402 Calumet Ave., Chicago. Exhibit by Supply Association of the American Railway Tool Foremen's Association.—Acting Secretary: H. W. Leighton, Harry W. Leighton Co., 565 W. Washington St., Chicago.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—T. F. Whittelsey, Union Trust Bldg., Washington, D. C.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York. Railroad Division, Marion B. Richardson, 30 Church St., New York.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—H. L. Dawson, 228 N. LaSalle St., Chicago. Annual convention, January 28-30, 1930, Seattle, Wash.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—H. D. Morris, District Claim Agent, Northern Pacific Ry., St. Paul, Minn. Annual convention, May, 1930, Richmond, Va.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., Room 413, C. & N. W. Station, Chicago. Annual meeting, October 22-25, 1929, Hotel Sherman, Chicago. Exhibit by Railway Electrical Supply Manufacturers' Association.

ASSOCIATION OF RAILWAY EXECUTIVES.—Stanley J. Strong, 17th and H Sts., N. W., Washington, D. C.

ASSOCIATION OF RAILWAY SUPPLY MEN.—J. W. Fogg, MacLean-Fogg Lock Nut Co., 2649 N. Kildar Ave., Chicago. Meets with International Railway General Foremen's Association.

BOILER MAKER'S SUPPLY MEN'S ASSOCIATION.—George R. Boyce, A. M. Castle & Co., Chicago. Meets with Master Boiler Makers' Association.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—I. B. Tanner, Joe. E. Nelson & Sons, 3240 So. Michigan Ave., Chicago. Meets with American Railway Bridge and Building Association, October 15-17, 1929.

CANADIAN RAILWAY CLUB.—C. R. Crook, 129 Charon St., Montreal, Que.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, Chicago & Alton, Chicago. Regular meetings, 2nd Monday in month, except June, July and August, Great Northern Hotel, Chicago.

CAR FOREMEN'S ASSOCIATION OF LOS ANGELES.—J. W. Krause, 514 East Eighth St., Los Angeles, Calif. Regular meetings, second Friday of each month, 514 East Eighth St., Los Angeles.

CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.—F. G. Wiegmann, 720 N. 23rd St., East St. Louis, Ill. Meetings first Tuesday of each month, except July and August, Broadview Hotel, East St. Louis, Ill.

CENTRAL RAILWAY CLUB.—E. F. Ryan (President), Buffalo, Rochester & Pittsburgh Ry., Buffalo, N. Y. Regular meetings, 2nd Thursday each month, except June, July, August, Hotel Statler, Buffalo, N. Y.

CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S ASSOCIATION.—(See Master Car Builders' and Supervisors' Association.)

CINCINNATI RAILWAY CLUB.—D. R. Boyd, 811 Union Central Bldg., Cincinnati, Ohio. Meetings, 2nd Tuesday in February, May, September and November.

CLEVELAND RAILWAY CLUB.—F. L. Frericks, 14416 Alder Ave., Cleveland, Ohio. Meetings, first Monday each month, except July, August, September, Hotel Hollenden, Cleveland.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich. Exhibit of International Railroad Master Blacksmith's Supply Men's Association.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' SUPPLY MEN'S ASSOCIATION.—J. H. Jones, Crucible Steel Company of America, Pittsburgh, Pa.

INTERNATIONAL RAILWAY CONGRESS.—Madrid, Spain, May 5-15, 1930.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—C. T. Winkless, Room 700, La Salle Street Station, Chicago. Next meeting, May 6-9, 1930, Hotel Sherman, Chicago. Exhibit by International Railway Supply Men's Association.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabasha St., Winona, Minn.

INTERNATIONAL RAILWAY SUPPLY MEN'S ASSOCIATION.—L. R. Pyle, Locomotive Firebox Co., Chicago. Meets with International Railway Fuel Association.

MASTER BOILER MAKERS' ASSOCIATION.—A. F. Stiglmeier, New York Central, 138 N. Allen St., Albany, N. Y. Annual meeting, May 21-24, 1930, William Penn Hotel, Pittsburgh, Pa. Exhibit by Boiler Maker's Supply Men's Association.

MASTER CAR BUILDERS' AND SUPERVISORS' ASSOCIATION.—A. S. Sternberg, Belt Ry. of Chicago, Polk and Dearborn Sts., Chicago. Exhibit by Supply Men's Association.

NATIONAL ASSOCIATION OF RAILROAD TIE PRODUCERS.—Roy M. Edmonds, 1252 Syndicate Trust Bldg., St. Louis, Mo.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—James B. Walker, 270 Madison Ave., New York. Next convention, Nov. 12-15, 1930, Charleston, S. C.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. W. Kelly, 1014 South Michigan Ave., Chicago. Exhibit at A. R. E. A. convention.

NATIONAL SAFETY COUNCIL.—Steam Railroad Section: A. W. Smallen, C., M., St. P. & P., Chicago.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, 2nd Tuesday in month, excepting June, July, August and September, Copley-Plaza Hotel, Boston, Mass.

NEW YORK RAILROAD CLUB.—E. Sumner (President), Asst. to Gen. Supt. M. P., Penna. R. R., Philadelphia, Pa. Regular meetings, 3rd Friday in month, except June, July and August.

PACIFIC RAILWAY CLUB.—W. S. Wollner, P. O. Box 3275, San Francisco, Cal. Regular meetings 2nd Tuesday in month, alternately in San Francisco and Oakland.

RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.—F. R. Woodson, 1116 Woodward Building, Washington, D. C. Annual convention, April 30-May 2, 1930, Hotel Roosevelt, New Orleans.

RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 1406 Packard Bldg., Philadelphia, Pa. Annual meeting, November 21, 1929, Hotel Stevens, Chicago.

RAILWAY CAR DEPARTMENT OFFICERS' ASSOCIATION.—(See Master Car Builders' and Supervisors' Association.)

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 515 Grandview Ave., Pittsburgh, Pa. Regular meetings, 4th Thursday in each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—Edward Wray, 9 S. Clinton St., Chicago. Meets with Association of Railway Electrical Engineers.

RAILWAY EQUIPMENT MANUFACTURERS' ASSOCIATION.—F. W. Venton, Crane Co., 836 S. Michigan Ave., Chicago. Meets with Traveling Engineers' Association.

RAILWAY FIRE PROTECTION ASSOCIATION.—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md. Annual meeting, October 15-17, 1929, Royal York Hotel, Toronto, Canada.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1841 Oliver Bldg., Pittsburgh, Pa. Meets with Mechanical Division and Purchases and Stores Division, American Railway Association.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, 30 Church St., New York. Meets with Telegraph and Telephone Section of A. R. A., Division 1.

RAILWAY TREASURY OFFICERS' ASSOCIATION.—L. W. Cox, 1217 Commercial Trust Bldg., Philadelphia, Pa.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—T. F. Donahoe, Gen. Supvr. Road, Baltimore & Ohio, Pittsburgh, Pa. Exhibit by Track Supply Association. Next meeting, 1930, Chicago.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings 2nd Friday in month, except June, July and August.

SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, West Nyack (Rockland Co.), N. Y. Meets with A. R. A. Signal Section.

SOUTHEASTERN CARMEN'S INTERCHANGE ASSOCIATION.—Clyde Kimball, Inman Shops, Atlanta, Ga. Meet semi-annually.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, P. O. Box 1205, Atlanta, Ga. Regular meetings, 3rd Thursday in January, March, May, June, September and November. Ansley Hotel, Atlanta.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—R. G. Parks, A. B. & A. Ry., Atlanta, Ga.

SUPPLY MEN'S ASSOCIATION.—E. H. Hancock, Treasurer, Louisville Varnish Co., Louisville, Ky. Meets with A. R. A. Div V. Equipment Painting Section.

SUPPLY MEN'S ASSOCIATION.—Bradley S. Johnson, W. H. Miner, Inc., Chicago. Meets with Master Car Builders' and Supervisors' Association.

TRACK SUPPLY ASSOCIATION.—L. C. Ryan, Oxweld Railroad Service Co., 80 E. Jackson Blvd., Chicago. Meets with Roadmasters' and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, 1177 East 98th St., Cleveland, O. Exhibit by Railway Equipment Manufacturers' Association.

WESTERN RAILWAY CLUB.—W. J. Dickinson, 189 West Madison St., Chicago. Regular meetings, 3rd Monday each month, except June, July and August.

Foreign Railways

Longest South American Tunnel to be Built in Chile

Eleven contractors have been asked to submit bids for the construction of the principal tunnel on the proposed railway line to run from Cura Cautin to Villa Portales, Chile. This tunnel, which is one link in a new Transandine railway, will be 4,545 meters (approximately three miles) in length.

Irish Free State Acquires New Battery-Charging Process

According to Department of Commerce reports, the government of the Irish Free State has acquired the patent rights to a battery-charging device invented by James J. Dunn, with the intention of giving the process thorough tests under actual working conditions. Much interest has been aroused in Ireland over the possibility that the device, if successful, may be capable of use in railway electrification.

Committee Reports Favorably on Channel Tunnel

The Channel Tunnel Committee, appointed last March by Stanley Baldwin, former Prime Minister of Great Britain, has decided to advise the English government to begin construction of an undersea tunnel between England and France. Although some minor points still remain undecided, the committee apparently feels that the project, which has been under consideration for fifty years, is feasible. Fear of its use by an invading army, the strongest argument advanced against the tunnel, has been overcome by a plan of depressing the tunnel at either end, so that it could be instantly flooded by Britain or France in case of war. The tunnel will cost about $150,000,000, and will employ 12,000 men for four years.

Higher Rates for Poland

An average increase of about 20 percent in the freight rates of the Polish Railways will be the result of a new tariff schedule, recently completed after more than a year of study by the railway authorities. Commodities have been completely reclassified, and the few reductions that have been made are for the purpose of subsidizing exports or diverting traffic over certain routes. Increased revenue under the new tariff is expected to amount to approximately $17,000,000 a year. This will be used chiefly for the purchase of new equipment, and for general additions and betterments to the system. The new rates will not go into full effect until the beginning of the next fiscal period, April 1, 1930.

French Railways to Improve Boat-Train Service

An extensive program of improvements in the passenger service between Cherbourg, Le Havre and Paris has been announced by the Director-General of the French State Railways. The Paris terminus of the boat-trains to the two north coast points will be changed from the Gare Saint-Lazare to the Gare des Invalides, which is being completely rebuilt and re-equipped to care for the new traffic. A new station is to be built at Havre, and that at the Cherbourg docks will be remodelled. Modern rolling stock, including 75 new steel coaches, will be put into service, and the time of the journey from Cherbourg to Paris, which now takes six hours, will be shortened. The various improvements are to come into effect in January, 1931.

Traffic

The Fort Smith & Western has opened a freight office at 598 Monadnock building, San Francisco, Cal.

Regulation of interstate air traffic by the Interstate Commerce Commission is proposed in a bill introduced in Congress by Representative Cable, of Ohio.

The headquarters of the St. Louis (Mo.) agency of the Delaware & Hudson has been removed from the Pierce building to 2083-2084 Railway Exchange building in that city.

Examiner E. J. Hoy of the Interstate Commerce Commission, in a proposed report on a general investigation of rates on salt to and between points in southern territory, has recommended a mileage basis of maximum rates for application for the future.

The Interstate Commerce Commission has suspended from September 30 to April 30, 1930, the operation of tariff schedules proposing to increase freight rates on lumber and related articles from Georgia and Alabama points to Ohio river crossings and points in Kentucky and Tennessee.

The Pennsylvania's freight train schedules providing third morning delivery at eastern terminals for freight from Chicago and St. Louis, are now available for all classes of merchandise, not simply perishable freight and live stock. Thus, the entire freight service, both eastbound and westbound, is now on the basis of third morning delivery.

The Interstate Commerce Commission has suspended from October 1, until May 1, 1930, the operation of tariff schedules which propose to revise the freight rates on scrap iron and steel, from points in Central Freight Association territory, including Illinois territory, when destined to Kokomo and other nearby points in Indiana, resulting in numerous increases as well as some reductions.

The Boston & Maine announces that the State of Maine Express now has through daily sleeping cars between Portland, Me., and Washington, D. C.; and between Concord, N. H., and Washington, except Saturday. The Concord car will be stopped at Lowell, Mass., to make convenient hours for passengers to and from that city.

The Delaware, Lackawanna & Western's Chicago Limited between New York and Chicago, over the Lackawanna and the Michigan Central, leaving New York at 2 p. m., is to be made one hour faster; it will arrive in Chicago at noon instead of at 1 p. m. The Whitelight Limited, leaving New York in the evening, will start at 9:30 instead of 8:30, reducing the time by one hour to Chicago, Cleveland, Syracuse and Ithaca.

"A Better Farming Train" is to be run by the Boston & Maine over its line in New Hampshire, beginning October 14, and continuing through the week. Stops will be made at 18 towns. Governor Charles W. Tobey and other representatives of the state will accompany the train, which is described as a county fair on wheels. Participating in this enterprise are the New Hampshire University, the Granite State Dairymen's Association and other organizations.

The "Washingtonian" and the "Montrealer," through trains between Montreal, P. Q., and Washington, D. C., over the Canadian National, the Central Vermont, the Boston & Maine, the New York, New Haven & Hartford and the Pennsylvania, have been made faster, and in the timetable of September 29 the trip is made southward in 16 hours, 35 minutes and northward in 16 hours, 5 minutes. The train leaves Washington at 3:50 p. m., arrives Montreal, 8 a. m.; Leaves Montreal at 8:20 a. m., arrives Washington at 12:55 p. m.

The eastern railroads have petitioned the Interstate Commerce Commission for a reargument, reconsideration and rehearing on the order issued by the commission in Part 6 of its rate structure investigation under the Hoch-Smith resolution, in which it prescribed a mileage scale of rates for iron and steel articles throughout Official Classification territory. The petition states that the rates would reduce the revenues of the carriers by more than $2,500,000 a year. The effective date of the order had been postponed at the request of the roads to December 20.

The New England Shippers' Advisory Board met at Poland Spring, Me., on September 27, with an attendance of about 325, and general chairman Garcelon presiding. A consolidated average of the predictions of the commodity

committees shows an expectation of 5.6 per cent increase in freight traffic during the current quarter as compared with last year. Some of the notable increases predicted are: Boots and shoes, 10 per cent; cement, 40; coal and coke, 10; iron and steel, 10 to 15; lime and plaster, 25; petroleum products, 15 to 20, and scrap metals, 25. No decreases are expected, except in ice, which they say will fall off 25 to 30 per cent. Factories manufacturing ice have largely increased their capacity, and there is no shortage of natural ice in any section of New England.

The "Everglades" operating between New England and Florida, over the New Haven, the Pennsylvania, the R. F. & P. and the Atlantic Coast line, is to be run through, beginning November 1, from Boston, Mass., to Jacksonville, Fla., in 29 hrs. 20 min. It will leave Boston at 4:30 p. m.; New York 10:20 p. m. and arrive at Jacksonville at 9:50 p. m. The time to Miami, Fla., will be 39 hrs., 20 min. and to St. Petersburg, 39 hrs. The schedules of other Florida trains will be considerably shortened.

Emergency Grain Rates Expire

The temporary emergency reductions in rates on wheat and wheat flour for export, which were put into effect by the railroads in May at the request of the President, expired by limitation on September 30. The Interstate Commerce Commission had not acted on that date on requests which had been filed with it by the Southern Kansas Millers' Club and the Galveston Chamber of Commerce that it suspend the expiration date of the emergency tariffs. Somewhat lesser reduction in rates to the Gulf ports for export, however, have been put into effect or proposed. A reduction from 30½ to 23½ cents per 100 lb. on wheat from Kansas City has become effective, whereas the emergency rate was 19 cents; and similar reductions from other interior points to the Gulf have been proposed in tariffs filed to go into effect on October 10 and later dates.

Western Trunk Lines Protest Proposed Report

Counsel for the western trunk line railroads have filed with the Interstate Commerce Commission a statement of exceptions to the recently-issued proposed report of the commission examiners recommending a series of mileage scales for western trunk line territory. They assert that the rates proposed by the examiners, estimated to produce an increase in revenues of approximately $24,000,000 a year are "generally inadequate and flagrantly inconsistent with the proof and findings of revenue needs of the western trunk line roads," which they say showed these roads to be entitled to an increase of at least $60,000,000 a year, in order to have a fair return of 5¾ per cent.

The proposals, according to the statement, will mean an advance in the eastern part of western trunk line territory, accompanied by sweeping reductions between the eastern and western portions and a system of through rates between official and southern territories and western trunk line territory of such severity as to be destructive of revenues and so revolutionary as to threaten the commercial life of the middle West. The commission is asked to disapprove the recommendations which exempt class rate traffic from contributing its full share to a lawful return on the carriers' property.

While the findings and conclusions as to the facts in the case reached by the examiners are generally approved, it is declared that they have failed to make recommendations consistent with the findings and that they "propose for western trunk line territory a general schedule of rates founded upon scales which originated in the Southeast and were made the basis of a readjustment in the Southwest, in both instances on records which did not lay before the commission the financial condition of carriers in western trunk line territory, the rate conditions in western trunk line territory or the proposal of such scales as a basis for readjusting rates to improve the situation of railroads whose right to improvement has been generally recognized, even by this commission itself." The commission has in this case a record, the carriers say, giving it full opportunity to assert its duty under the law to aid these railroads to a fair return.

Western Roads Ask Higher Livestock Rates

A higher level of rates on livestock for application in the western district—higher than that recommended by Interstate Commerce Commission examiners in their proposed report on Part 6 of the commission's rate structure investigation—was urged by counsel for the carriers at the opening of the four-day argument at Washington in the case on October 1 before the commission and a committee of state railroad and utilities commissioners. They contended that if the Hoch-Smith resolution requires an adjustment of rates to the condition of an industry it certainly demands an increase in rates, reduced at a time of depression in the industry, after it has been made clear that the industry has recovered, and they argued that the livestock business is now in such a condition as to be able to bear a normal basis of freight rates.

Attorney-Examiner Chester E. Stiles and Examiner Arthur S. Parker, in the proposed report of 265 pages made public in May, recommended two mileage scales of livestock rates, one for application between all points in the western district east of the Rocky mountains and the other on a somewhat higher basis for application between points in the Mountain-Pacific territory; with a scale of arbitraries to be added to the lower scale for interterritorial movements. They took the position that livestock in much of the western district is not at present bearing its fair share of the transportation burden, while the scales recommended are intended to produce only the service cost plus a minimum of profit.

Kenneth F. Burgess, general solicitor of the Chicago, Burlington & Quincy, speaking for the western trunk lines, said that while the scales recommended were intended to produce an increase of about 9 per cent in revenues, the numerous departures from the scales and the proposed rule that the rates should be made over the shortest lines would just about wipe out any increase, so that the result would be altogether too low for western trunk line territory.

D. F. Smith, commerce counsel for the Union Pacific, speaking for the lines in Mountain-Pacific territory, took the position that livestock has recovered from its depression and that rates should now be increased to a normal basis. He pointed out that the rates proposed for that territory approximate those resulting from the 20 per cent reduction which was ordered in 1921 to meet the depression in the livestock industry, and that the cattle rates are only about 18 per cent higher than those in effect in 1916, although railway expenses have increased since that time by 48 per cent. If livestock is entitled to so much discrimination, he said, what other industry is going to stand rates to make up for it? He predicted that there would be no volunteers.

M. L. Countryman, assistant general counsel of the Northern Pacific, said that the proposed rates would be disastrous to the northern lines. Other arguments on behalf of the carriers were presented by J. L. Lyons, C. M. Spence and R. S. Outlaw.

E. S. Ballard, arguing for the Security Holders' Committee for a Fair Return, objected to the proposed scales because he said they would produce little or no increase in revenue, whereas the carriers' proposals would result in an increase of about $5,000,000 a year, and he contended that any such general revision of rates as is proposed should contribute toward allowing the roads the fair return contemplated by law. The mandate of the statute, he said, requires that the rates be put at the level of maximum reasonableness rather than the minimum.

Railroads Move American Legion to Louisville

Railways entering Louisville, Ky., brought 15,000 persons into that city on September 29 and 30 to attend the American Legion convention. To accommodate those who traveled to Louisville with Pullman service, the Pullman Company authorized the movement of about 490 special cars, 289 of which were per diem or chartered cars that were parked in team yards and on storage tracks for the duration of the convention. About 175 of the chartered cars were parked on Louisville & Nashville tracks at or near that railroad's passenger station at Tenth street and Broadway, while the remainder were placed at various accessible points in the city.

The Pennsylvania and the Louisville &

Nashville handled the bulk of the movement, bringing 130 extra cars in 15 special trains and 110 cars in 12 extra sections or special trains respectively into the city. The L. & N. received 10 of the extra sections in interchange at Cincinnati and moved two trains into Louisville from the South.

The Baltimore & Ohio handled 60 additional cars, of which 12 were chartered and in addition delivered three solid trains of Legion delegates from the East to the Louisville & Nashville at Cincinnati. The Southern used five extra trains with a total of 50 cars in special trains or extra cars in regular trains. Forty-five extra cars in regular trains and two special trains, one from Chicago and the other from Milwaukee, via the Chicago, Milwaukee, St. Paul & Pacific, were handled by the Chicago, Indianapolis & Louisville.

The Cleveland, Cincinnati, Chicago & St. Louis movement of 45 chartered cars were brought in to Louisville in special trains. Legionnaires traveling over the Illinois Central required the use of 15 extra cars in two extra sections of regular trains and a special train from Waterloo, Iowa, which was operated over the Pennsylvania from Chicago.

Canadian National Places Grain Car Rationing in Effect

A system of car-rationing for grain shipments from Canadian prairie points to the head of the Great Lakes was placed in effect by the Canadian National on October 1 as a means of preventing undue delay of loaded grain cars at water terminals and of protecting the car requirements of other commodities. On September 26, grain in storage at lakehead elevators totaled 70,000,000 bu. as compared with the storage capacity in these elevators of 86,000,000.

This restriction has been placed against the acceptance of all grain consigned to or intended for delivery to elevators at Port Arthur, Ont., Fort William and Westfort. Available cars will be distributed to stations where the storage is becoming or has become congested to assist the farmers to place the greatest possible amount of their grain under cover. Restriction has also been placed against the acceptance of all grain consigned to mills and elevators at Winnipeg, Man., S. Boniface and Transcona, and permission for movement, as in the case of the distribution of cars will be under the direction of the superintendent of car service of the Canadian National. It is not expected that the rationing rule will divert grain to Pacific Coast ports but will compel the use of vacant storage space in interior elevators. On September 26 interior elevators with a total capacity of 100,000,000 bu. were storing only 33,752,000 bu.

A permit system for loaded grain cars destined to Pacific Coast ports is now in effect in Alberta, and Vancouver elevators report 7,285,000 bu. in storage, an amount more than five times as great as that stored at a corresponding time in 1928.

Equipment and Supplies

Locomotives

THE KENTUCKY & INDIANA TERMINAL is inquiring for eight switching locomotives.

J. G. WHITE ENGINEERING COMPANY is inquiring for two locomotives of the 2-8-0 type for the Pacifico of Nicaragua.

THE COOS BAY LUMBER COMPANY has ordered two locomotives of the 2-8-2 type from the American Locomotive Company.

THE GREAT NORTHERN has ordered 14 passenger locomotives of the 4-8-4 type from the Baldwin Locomotive Works. Inquiry for 12 locomotives was reported in the *Railway Age* of July 13.

THE CHILEAN STATE RAILWAYS have ordered five locomotives of the 4-8-2 type from the Baldwin Locomotive Works. A previous order for twelve locomotives placed with the same builder was reported in the *Railway Age* of August 3.

THE BUFFALO GENERAL ELECTRIC COMPANY has ordered one 66-ton, 300-hp. oil-electric locomotive from the manufacturing collaborators—the American Locomotive Company, the Ingersoll-Rand Company and the General Electric Company.

THE PENNSYLVANIA board of directors has authorized the construction of 100 new locomotives of the 4-8-2 type (Class N1) for use in fast through freight service. The cost will be about $9,000,000. These locomotives will be operated with a new type of tender, capable of carrying 21,900 gal. of water and 60,000 lb. of coal.

THE GREAT NORTHERN has ordered from the General Electric Company four 3,000 hp. electric locomotives for use on passenger trains on the electrified division. The new locomotives will cost about $250,000 each and will weigh about 530,000 lbs. They will be built so they can be operated in multiple, each unit being capable of handling a 1000-ton train on any of the grades. Each locomotive has six traction motors which deliver power to six axles.

THE CHICAGO, BURLINGTON & QUINCY has authorized the purchase of 13 locomotives, 2700 freight cars and 34 passenger cars as follows:

For the Chicago, Burlington & Quincy:

No.	Type
8	Mikado type locomotives
5	Passenger locomotives
500	Automobile cars
600	Flat cars
800	Hopper coal cars
10	Baggage cars
14	Steel suburban cars
10	Gas electric rail motor cars

For the Colorado & Southern:

No.	Type
700	Box cars
100	Flat cars

Freight Cars

COLORADO & SOUTHERN.—See Chicago, Burlington & Quincy item under locomotives.

CHICAGO, BURLINGTON & QUINCY.—See item under locomotives.

THE NORFOLK & WESTERN has ordered 1000 all-steel hopper coal cars of 57½ tons' capacity from the Ralston Steel Car Company and 1000 from the Bethlehem Steel Company. Inquiry for this equipment was reported in the *Railway Age* of September 7.

THE SEABOARD AIR LINE has ordered 465 box car bodies from the Standard Steel Car Company.

THE GREAT NORTHERN has ordered 300 steel underframes, which will be used in the construction of ore cars during the fall and winter, from the General Steel Castings Corporation, Granite City, Ill.

Passenger Cars

CHICAGO, BURLINGTON & QUINCY.—See item under locomotives.

Miscellaneous

THE LOCOMOTIVE FIREBOX COMPANY has received orders during September for 306 thermic syphons for application to 135 locomotives including two syphon installations as follows:

No.	Road
12 locomotives	Boston & Maine
1 locomotive	Chicago & Eastern Illinois
1 locomotive	Chicago Great Western
9 locomotives	Chicago, Rock Island & Pacific
12 locomotives	Chilean State Railways
2 locomotives	Denver & Salt Lake
2 locomotives	Erie
17 locomotives	Illinois Central
11 locomotives	Missouri Pacific
3 locomotives	Newfoundland Government
15 locomotives	Texas & Pacific
25 locomotives	Wabash
13 locomotives	Wheeling & Lake Erie

Also three syphon installations as follows:

1 locomotive	Chesapeake & Ohio
1 locomotive	New Haven

Also five syphon installations on 11 Northern Pacific locomotives.

Signaling

THE CHILEAN STATE RAILWAYS have ordered from the Union Switch & Signal Company material for automatic wigwag signals, style DW, for 15 highway crossings.

THE CANADIAN PACIFIC has ordered from the Union Switch & Signal Company material for an interlocking at Papineau Avenue, Montreal; seven mechanical and eight electric levers.

THE PENNSYLVANIA has ordered from the Union Switch & Signal Company material for an electro-pneumatic interlocking at AO Tower, Conemaugh, Pa., 23 levers.

THE ILLINOIS CENTRAL has contracted with the Union Switch & Signal Company for the installation of automatic block signals on its line between Ruslor, Miss., and Haleyville, Ala., 80 miles, single track. Color-light signals will be used.

Iron and Steel

THE HOCKING VALLEY has ordered 5,476 tons of rail from the Illinois Steel Company.

THE GRAND TRUNK is inquiring for 2,000 tons of structural steel for grade crossing elimination at Detroit, Mich.

THE CHICAGO, INDIANAPOLIS & LOUISVILLE has ordered 4,500 tons of rail from the Illinois Steel Company.

THE SOUTHERN has received bids on 150 tons of steel for a bridge at Georgetown, Ky.

THE BOSTON & ALBANY has received bids on 500 tons of steel for a roundhouse at West Springfield, Mass.

THE PERE MARQUETTE has ordered 20,300 tons of rail. The order was divided as follows: Illinois Steel Company, 7,920; Inland Steel Company, 9,953; Bethlehem Steel Company, 1,727; and Algoma Steel Company, 700 tons.

THE ATCHISON, TOPEKA & SANTA FE has ordered 87,500 tons of rail. The order was divided among the following companies: Colorado Fuel & Iron Company, 75,000 tons; Illinois Steel Company, 6,250 tons and the Inland Steel Company, 6,250 tons.

THE CHESAPEAKE & OHIO has ordered 53,480 tons of rail for its 1930 requirements. The order was divided as follows: Illinois Steel Company, 18,604 tons, Bethlehem Steel Company, 16,273 tons, Inland Steel Company, 10,047 tons, Carnegie Steel Company, 8,556 tons.

* * *

A C. & N. W. Suburban Train At Austin, Ill.

Supply Trade

The **American Chain Company, Inc.,** has moved its Chicago offices to Room 1765, Chicago Daily News Building.

The Central Iron & Steel Company, Harrisburg, Pa., has moved its Boston office from 131 State street to the Statler building, Park Square. **G. T. Armstrong** remains in charge.

A. E. Biddle, formerly sales representative of W. H. Miner, Inc. has been appointed vice-president and sales manager of the **Union Railway Equipment Company,** Chicago.

Ross M. Blackburn, representative of the **Buda Company,** Harvey, Ill., has been promoted to district sales manager of the Chicago territory with headquarters in the Railway Exchange building, Chicago.

H. E. Passmore, Pittsburgh, Pa., has been appointed railroad representative of **Tate-Jones & Co., Inc.,** Leetsdale, Pa. Mr. Passmore has been appointed railroad representative also of the **Duraloy Company,** Pittsburgh, Pa.

The Automatic Transportation Company, Buffalo, N. Y., has established a factory branch at 531 Pershing road, Chicago. **L. R. Lindsley** has been appointed Chicago sales manager and **W. F. Weber** has been appointed assistant Chicago sales manager.

Joseph Jacobson, with headquarters at Detroit, Mich., has joined the sales force of the **Goodell-Pratt Company,** Greenfield, Mass., **John Metz,** Richmond Hill, Long Island, has taken over the territory in New York formerly assigned to **E. C. Mesloh,** and the **F. J. Keller Company,** Dallas, Tex., has been appointed to handle sales in that territory.

The New York Air Brake Company announces the resignation of **James H. Watters,** vice-president, to accept the presidency of another company, effective September 30, 1929; **L. K. Sillcox** has been elected vice-president, effective October 1, 1929; **K. E. Keiling** has been appointed general sales agent, effective the same date.

The Central Alloy Steel Corporation has authorized an expenditure of more than $600,000 for improvements at both the Massillon, Ohio and Canton plants. At Massillon the entire sheet rolling mill plant will be equipped with continuous pack and pair furnaces and in addition electric drive equipment will be installed; at Canton a normalizing furnace designed by the company's engineering and metallurgical departments is to be installed. The new furnace will be 108 in. wide and 100 ft. long.

W. H. Cadwallader, who has been elected vice-president of the **Union Switch & Signal Company** with headquarters in Swissvale, Pa., was born on February 11, 1876, in Wilkinsburg, Pa. After completing his high school education in his home city, he entered the service of the Union Switch & Signal Company as a blue print boy in 1891, being promoted to clerk in 1894. He served the company in various capacities from that date to 1911, when he was

W. H. Cadwallader

appointed acting assistant general manager. A year later he was appointed assistant general manager, and in 1914, was elected general manager, which position he held until 1915 when he was also appointed assistant to the general sales manager. In 1923, he was appointed assistant to the vice-president and general manager and, also, acting vice-president which position he held until his recent appointment.

W. P. Bovard, rail bond sales and service engineer of the **Ohio Brass Company,** has been promoted to manager of

W. P. Bovard

the rail bond division to succeed Marshall McCormick, Jr., deceased. During the 17 years in which he has been in the employ of the Ohio Brass Company, he has dealt with electric and steam rail-

ways first as a designing engineer and later as a rail bond sales and service engineer. Before becoming connected with the Ohio Brass Company, he was employed by the Union Switch & Signal Company.

V. C. Baker, formerly employed in the factory office of the **Ampco Twist Drill Company**, Jackson, Mich., has been appointed district sales manager, with headquarters at 724 W. Washington boulevard, Chicago. A branch has been established at Dayton, Ohio with **P. J. McMullen** of the McMullen Tool and Supply Company as manager and the Cincinnati office has been discontinued, Mr. McMullen servicing that territory.

Joshua D'Esposito, consulting engineer at Chicago and formerly chief engineer of the Chicago Union Station Company, has moved his offices to suite 1700 Chicago Daily News building.

R. B. Pogue of the engineering department of the **American Brake Shoe & Foundry Company**, New York, has been appointed assistant chief engineer. Mr. Pogue was born in 1889 at May's Lick, Ky. After attending Center College he continued his studies at the University of Kentucky and was graduated with the degree of bachelor of science in 1913. He later entered the college of railway, mechanical and electrical engineering at the University of Illinois, being graduated with the degree of master of science in 1915. During 1915 and 1916 he was a special apprentice in the mechanical department of the Chicago, Rock Island & Pacific. Since that time he has served the American Brake Shoe & Foundry Company in various engineering capacities. During the World War he was officer in charge of engineering for the Bureau of Air of the Central district at Buffalo, N. Y.

Construction

ATCHISON, TOPEKA & SANTA FE.—This company plans the immediate construction of new stock yards and accompanying facilities at Galesburg, Ill.

ATCHISON, TOPEKA & SANTA FE.—This company plans extensive improvements in stores facilities at Topeka, Kan., which will include the construction of a new storehouse and concrete platforms for the storage of material.

CANADIAN PACIFIC.—A contract for the construction of a six-mile branch line near Chelmsford, Ont., at a cost of $150,000, to tap a mining area, has been let to the Dominion Construction Company, Toronto, Ont. A contract has been awarded to the Sidney E. Junkins Company, Ltd., and the P. M. Smith Construction Company for the construction of concrete piers and the encasing of existing piers to provide for the strengthening and replacing of various bridges on the main line between Vancouver, B. C., and Kamloops. A number of contracts have been let for improvements to buildings and other facilities at Winnipeg, Man. These include the construction of an extension to the car repair building for which a contract has been awarded to J. H. Simmons; the construction of a steam pipe duct with various branches in the coach yard, to the Canadian Engineering & Construction Company and Bearisto, Limited; the construction of a building to house a washout plant, to Macaw & Macdonald; the installation of a mechanical ash handling plant to care for the disposal of ashes from locomotives, to LaCour & Schioler; and the installation of equipment for the disposal of shavings by exhaust, to the Day Company. A contract has been let to Heyl & Patterson, Inc., Pittsburgh, Pa., for the construction of a portable coal screening plant under the Wellman, Seaver, Morgan coal bridge and coke screening equipment at the McMyler coal bridge on Island No. 1 at Fort William, Ont.

CHESAPEAKE & OHIO.—A contract has been let to Boxley Bros. Company, Inc., Orange, Va., for the rebuilding of bridge No. 6013 at Maysville, Ky., at a probable cost of $174,600. This company also plans the installation of A. R. A. flasher light signals at fourteen street crossings in Ashland, Ky., at an estimated cost of $31,500.

CHICAGO, BURLINGTON & QUINCY.—The board of directors has authorized the construction of a new classification yard with a track capacity of 10,000 cars at Galesburg, Ill., which with accompanying terminal facilities will involve the ultimate expenditure of about $5,000,000. The yard will consist of three units, with eastbound and westbound humps equipped with car retarders, and 49 eastbound and 49 westbound classification tracks. The project, which it is expected will be finally completed within three years, also involves the rearrangement of the present locomotive terminal at Galesburg. A contract has been awarded to V. R. Gould, Omaha, Neb., for the rearrangement and construction of an addition to the passenger station at Omaha at a cost of about $700,000. A contract for the construction of an addition to the roundhouse at Western avenue, Chicago, has been let to G. A. Johnson, Chicago, at a cost of $125,000.

CHICAGO & NORTH WESTERN.—Contracts have been let for the construction of a third main track between Des Plaines, Ill., and Barrington, 15 miles, a project which involves a total expenditure of about $1,400,000. A contract has been awarded to Roberts Brothers, Chicago, for the grading, involving the excavation of about 190,000 cu. yd. of earth. A contract for the extension of bridges has been let to Peppard & Burrill, Minneapolis, Minn. Track laying and ballasting will be undertaken by company forces.

CHICAGO, ROCK ISLAND & PACIFIC.—A contract for the construction of a yard office and an interlocking tower at Blue Island, Ill., has been let to the T. S. Leake Construction Company, Chicago. This company and the city manager of Fort Worth, Tex., have let a contract to E. L. Martin, Dallas, Tex., for the construction of a highway subway under the railroad tracks at Forth Worth, at a cost of $160,000. A contract for placing a hydraulic dredge fill for 500,000 cu. yd. of embankment at Oklahoma City, Okla., has been awarded to T. E. Wiggins, Oklahoma City, at a cost of about $30,000.

COLORADO & SOUTHERN.—A contract has been let for the construction of a 2.5 mile extension of the Ingleside (Colo.)-Fort Collins branch line.

DELAWARE & HUDSON.—Plans submitted by this company for the elimination of three grade crossings in Princetown, N. Y., have been approved by the Public Service Commission of New York.

GALVESTON WHARF COMPANY.—A contract for the driving of 425,000 lin. ft. of piles and the construction of the foundation for a grain elevator at Galveston, Tex., has been let to E. A. Whitney & Son, Kansas City, Mo.

NEW YORK CENTRAL.—The Public Service Commission of New York has ordered the elimination of the Watkins-Yates county line state highway crossing, 200 ft. south of the Reading center station of the New York Central at Reading, Schuyler County, N. Y. The elimination is to be accomplished by depressing the grade of the highway on a new alignment and carrying it under the grade of the railroad. The railroad company will design and erect the substructure and superstructure for the underpass, while the remainder of the work will be done by the Department of Public Works. The estimated cost, including land and damages, is $140,950.

PENNSYLVANIA-NEW YORK, CHICAGO & ST. LOUIS.—Existing highway crossings between the tracks of these companies and Brandt road, Angola, N. Y., have been designated for elimination by the Public Service Commission of New York. Fifty per cent of the cost of depressing the highway grade is to be divided between the railroad companies.

ST. LOUIS SOUTHWESTERN.—Bids are being received for the construction of a car repair shed at Tyler, Tex.

SOUTHERN (Cincinnati, New Orleans & Texas Pacific).—A contract has been awarded to the Bates & Rogers Construction Company, Chicago, for the construction of a second main track between Blanchet, Ky., and Sadieville, 9 miles. It was reported in the *Railway Age* of August 31 that bids for this work were to be opened.

SOUTHERN PACIFIC.—The city engineer of Houston, Tex., closed bids on October 2 for the construction of a highway subway under the tracks of this company at Milam street, Houston. This construction project, which will cost about $75,000, is part of the improvement program in that city necessitated by the proposed construction of a new passenger station. The cost of the grade crossing structure will be borne by the city and the railroad.

ULSTER & DELAWARE.—Elimination of the grade crossing of this company's lines and the junction of the Harpersfield and Davenport Center highways at Davenport Center, N. Y., by carrying the highway over the railroad tracks, has been ordered by the Public Service Commission of New York. The cost of the work, all of which is to be done by the railroad, is estimated at $100,000, exclusive of land and damages.

WESTERN PACIFIC. — The Interstate Commerce Commission has authorized this company to construct a branch line from Harte to a point on Disappointment Slough, San Joaquin county, Cal., a distance of 3.25 miles.

WESTERN PACIFIC.—The Western Pacific California, a subsidiary, has applied to the Interstate Commerce Commission for a re-opening of the proceeding in which a commission examiner has recommended denial of its application for authority to construct a line from San Francisco to Redwood City, Cal. The line was proposed as the first unit in a plan to give the Western Pacific an entrance to San Francisco and the application states that it has now been determined desirable to proceed with the construction of the final unit, a line connecting with the Western Pacific at or near Niles, Cal.

Railway Finance

AROOSTOOK VALLEY.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue and sell $1,000,000 of general first and refunding mortgage 5½ per cent bonds for the purpose of retiring outstanding bonds and reimbursing the treasury for capital expenditures.

BALTIMORE & OHIO.—*Equipment Trust.*—An application has been filed with the Interstate Commerce Commission for authority for an issue of $13,500,000 of 4½ per cent equipment trust certificates.

BALTIMORE & OHIO.—*Clayton Act Proceeding.*—The Interstate Commerce Commission has assigned for oral argument before the full commission on November 22 its complaint against the Baltimore & Ohio alleging violation of the Clayton law in its acquisition of stock of the Western Maryland.

BANGOR & AROOSTOOK.—*Stock.*—This company has applied to the Interstate Commerce Commission for authority to issue $1,761,600 of common stock to partially reimburse its treasury for capital expenditures.

CANADIAN NATIONAL.—*Bonds.*—A syndicate of 30 banking houses, including both Canadian and United States institutions, is offering $30,000,000 of 40-year 5 per cent bonds of this company, which are guaranteed unconditionally as to principal and interest by the Dominion of Canada. The issue is being offered at 98½.

CHICAGO & NORTH WESTERN.—*Equipment Trust.*—The Interstate Commerce Commission has authorized this company to assume obligation and liability in respect of $8,775,000 of its 4½ per cent equipment trust certificates, series B and W, the issue to be sold at 94.297, the highest bid, to a syndicate headed by the Bankers Company of New York. This price will make the average annual cost to the railroad approximately 5.4359 per cent. The issue will mature in annual installments for the next 15 years.

CINCINNATI UNION TERMINAL.—*Stock.*—Hornblower & Weeks and Aub & Co., are offering $3,000,000 of cumulative 5 per cent preferred stock of this company, payment of which is guaranteed by seven railroads which will use the new terminal. The issue is being offered at 105, which will make the net yield 4.76 per cent.

DENVER & RIO GRANDE WESTERN.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon a line from Engleville to Engleville Junction, Colo., 6.4 miles. The D. & R. G. W. and the Chicago, Rock Island & Pacific have applied to the commission for authority for the operation by each of the other's terminal facilities at Denver and Colorado Springs, Colo., under a new trackage agreement.

NEW YORK, CHICAGO & ST. LOUIS.—*Notes.*—This company has applied to the Interstate Commerce Commission for authority to issue $20,000,000 of three-year 6 per cent notes, the proceeds to be used in acquiring from the Alleghany Corporation certificates of deposit for 198,662 shares of stock of the Wheeling & Lake Erie which was deposited with a trustee pending action by the Interstate Commerce Commission on the Nickel Plate's application for authority to acquire control of the Wheeling & Lake Erie. The company had an option to purchase the certificates at a net cost of $19,965,410 and the new application supersedes an earlier one for authority to sell its own stock for the purpose.

NEW YORK, NEW HAVEN & HARTFORD.—*N. Y. W. & B. Interest.*—The New Haven has made public the following statement:

"For the first time since the New York, New Haven & Hartford started 17 years ago to pay the bond interest on the 4½ per cent first mortgage bonds of the New York, Westchester & Boston under its guarantee, amounting to $864,000 a year, the Westchester Company has itself assumed part of this obligation. It recently paid $300,000 to the New Haven to apply on the current year's interest, and expects to pay an additional $200,000 before the end of this year.

"This means that the New Haven's guarantee of the Westchester bonds will cost it only $364,000 this year as compared with $864,000 annually for the last sixteen years.

"The improved prospects for the New York, Westchester & Boston are such that it is anticipated that next year it will assume an even larger proportion of this bond interest, and it is quite probable that by 1931 the Westchester will be able to assume the entire fixed charge.

"This guaranteed interest has heretofore been taken into consideration by the New Haven in declaring dividends on its common stock. The proportion assumed by the Westchester this year is equivalent to 32 cents per share on the New Haven common."

SANTA FE, SAN JUAN & NORTHERN.—*Capital Stock.*—The Interstate Commerce Commission has authorized this company to issue 14,180 shares of common stock without par value, the stock to be delivered to Abram I. Kaplan in payment for railroad properties and trackage rights.

SEABOARD AIR LINE.—*Bonds.*—The Interstate Commerce Commission has authorized the Prince George & Chesterfield to issue $900,000 of first mortgage 25-year 6 per cent bonds, series A. to be sold from time to time to the Seaboard Air Line at par and the proceeds devoted to pay advances made by the latter company to the former.

YANKTON, NORFOLK & SOUTHERN.—*Stock.*—This company has filed with the Interstate Commerce Commission an amended application for authority to issue $1,225,000 of first mortgage 30-year 6 per cent bonds for the purpose of purchasing stock of the Meridian Highway Bridge Company.

Average Prices of Stocks and of Bonds

	Oct. 1	Last week	Last year
Average price of 20 representative railway stocks.	149.91	155.39	121.48
Average price of 20 representative railway bonds..	89.15	89.55	93.67

Dividends Declared

Atchison, Topeka & Santa Fe.—Common, $2.50, quarterly, payable December 2 to holders of record November 1.

Bangor & Aroostook.—Common, $.87, quarterly; Preferred, $1.75, quarterly, both payable January 1 to holders of record November 30.

Delaware, Lackawanna & Western.—$1.50, quarterly, payable October 21 to holders of record October 5.

Reading Company.—Common, $1, quarterly, payable November 14 to holders of record October 17.

Railway Officers

Executive

William E. Bolton, chief clerk in the operating department of the Chicago, Rock Island & Pacific at Chicago, has been promoted to assistant to the vice-president in charge of operation, with headquarters at the same point.

Operating

F. E. French has been appointed trainmaster of the St. Joseph division of the Chicago, Burlington & Quincy, with headquarters at St. Joseph, Mo., succeeding **H. T. Murray,** deceased.

E. E. Carter has been appointed trainmaster of all districts of the Eastern division of the Missouri Pacific, with headquarters at Jefferson City, Mo. **G. T. Lewis** has been appointed operating rules instructor, with headquarters at St. Louis, Mo.

M. O. Gay, trainmaster on the Arkansas-Louisiana division of the Chicago, Rock Island & Pacific at Little Rock, Ark., has been promoted to assistant superintendent of that division, with headquarters at Eldorado, Ark. Announcement of this promotion was incorrectly included among the appointments of mechanical officers in *Railway Age* of September 28 under the name of M. O. Gayned.

S. L. McClanahan, division engineer of the Oklahoma-Southern division of the Chicago, Rock Island & Pacific, with headquarters at Fort Worth, Tex., has been appointed trainmaster on the same division at Chickasha, Okla., succeeding **F. L. Campion,** who has been transferred to the St. Louis-Kansas City division at Eldon, Mo. **W. H. Dick** has been appointed trainmaster on the Kansas division at Topeka, Kan., succeeding **C. Fowler,** who has been transferred to the El Paso-Amarillo division at Pratt, Kan.

William White, who has been promoted to assistant general manager of the Western district of the Erie, with headquarters at Youngstown, Ohio, has been connected with that railway for 16 years. He was born on February 3, 1897, and entered railroad service at the age of 16 years as a clerk in the office of the auditor of freight accounts of the Erie at New York. After serving for a number of years as a stenographer and clerk to the superintendent of the New York, Susquehanna & Western at Jersey City, N. J., and to the vice-president of the Erie at New York, as secretary to the operating vice-president, as secretary to the assistant director of the Eastern region of the Railroad Administration, as secretary of the New York district conference committee and as office manager in the operating department of the Ohio region of the Erie at Youngstown, Mr. White was promoted to trainmaster of the Kent division at Marion, Ohio, in 1923. In the following year he was transferred to the Mari-

William White

on division at Huntington, Ind., where he remained until 1927 when he was promoted to terminal superintendent at Youngstown. Mr. White's further promotion to assistant general manager of the Western district became effective on September 16.

Traffic

R. T. Etheridge has been appointed assistant general freight agent of the Seaboard Air Line. His headquarters will be at Norfolk, Va.

Joseph Quinn has been appointed city passenger and ticket agent of the Delaware & Hudson, with headquarters at New York.

J. O. Younger has been appointed general agent of the freight department of the Chicago, Rock Island & Pacific at Winston-Salem, N. C.

Joe Campbell has been appointed Pacific Coast agent of the Fort Smith & Western, with headquarters at San Francisco, Cal., a newly created position.

D. E. Gilbert, division freight agent for the Wabash at Toledo, Ohio, has been promoted to assistant general freight agent, with the same headquarters, and the position of division freight agent at that point has been abolished.

Edmund J. Shakeshaft, who has been promoted to general passenger agent of the Atchison, Topeka & Santa Fe, with headquarters at Topeka, Kan., has been connected with various railways in the West for nearly 51 years. He was born at Lee, Kent county, England, on December 14, 1861, and attended Russell Hill School, Purley, Surrey county, England, from 1868 to 1876. At the age of 16 years he entered railway service as a clerk in the office of the auditor of the Kansas Pacific (now part of the Union Pacific) at Kansas City, Mo.,

Edmund J. Shakeshaft

later serving in the same capacity on the Union Pacific at Omaha, Neb. From 1883 to 1905 Mr. Shakeshaft was successively rate clerk, chief rate clerk and chief clerk in the passenger department of the Union Pacific, rate clerk and chief rate clerk in the passenger department of the Santa Fe and chief clerk of the passenger department of the latter railway. On October 10, 1905, he was promoted to assistant general passenger agent, with headquarters at Topeka. His promotion to general passenger agent at Topeka became effective on October 1.

James B. Duffy, who has been promoted to assistant passenger traffic manager of the Atchison, Topeka & Santa Fe, with headquarters at Los Angeles, Cal., has been connected with that railway for nearly 40 years. He was edu-

James B. Duffy

cated at private schools in San Francisco, Cal., graduating from Sacred Heart College in that city and then entering railway service in January, 1890, as an assistant ticket agent in the passenger department of the Santa Fe. For the following 18 years Mr. Duffy advanced

through the positions of rate clerk in the general passenger office at San Francisco, chief clerk at Prescott, Ariz., and at Albuquerque, N. M., passenger agent at San Jose, Cal., and city passenger agent at San Francisco. In 1908 he was promoted to general agent of the passenger department at that point. During federal control of the railroads he served as manager of the consolidated ticket office of the United States Railroad Administration at San Francisco. Mr. Duffy returned to the Santa Fe in March, 1920, and was appointed assistant general passenger agent at San Francisco, then being promoted to general passenger agent, with headquarters at Los Angeles, in February, 1922. His further promotion to assistant passenger traffic manager became effective on October 1.

Benton M. Bukey, who has been promoted to assistant passenger traffic manager of the Atchison, Topeka & Santa Fe, with headquarters at Chicago, has been connected with that railway for 23 years. He was born on November 6, 1879, at Williamstown, W. Va., and obtained his education in the public schools of the District of Columbia, graduating from the Central High School at Washington, D. C., in 1899. In November of that year he entered railway service on the Southern at Washington. Subsequently Mr. Bukey was employed by the Chicago, Burlington & Quincy at Chicago and by the Missouri Pacific and the Missouri-Kansas-Texas at St. Louis, Mo. He entered the service of the Santa Fe in October, 1906, as a rate

B. M. Bukey

clerk in the office of the passenger traffic manager, being promoted to chief clerk to the passenger traffic manager in 1909 and to assistant general passenger agent, with headquarters at Chicago, in November, 1915. During federal control of the railroads he served on the staff of the director of traffic of the Railroad Administration as assistant to the director of inland traffic for the Navy department. Upon the return of the railroads to private control Mr. Bukey resumed the position of assistant general passenger agent of the Santa Fe. His promotion to assistant passenger traffic manager at Chicago became effective on October 1.

Engineering, Maintenance of Way and Signaling

J. F. Murray, assistant chief engineer of the Pennsylvania, with headquarters at Philadelphia, has been transferred to Baltimore as engineer in charge of the improvements being made in the railroad facilities at that point.

M. O. Scobee, district supervisor of telegraph and telephone on the Southern Pacific at El Paso, Tex., has been promoted to superintendent of telegraph of the Southern Pacific Lines in Texas and Louisiana with headquarters at Houston, Tex., succeeding Percy Hewett, deceased.

Roy Leas, office engineer in the office of the district engineer of maintenance of way of the Chicago, Rock Island & Pacific at El Reno, Okla., has been promoted to division engineer of the Pan Handle division, with headquarters at the same point, succeeding **A. H. Sturdevant,** who has been transferred to the Oklahoma-Southern division, with headquarters at Fort Worth, Tex.

W. R. Gillam, division roadmaster on the Illinois Central at Carbondale, Ill., has been promoted to district engineer of the Northern lines, with headquarters at Chicago. **C. J. Harrington,** division roadmaster on the Memphis (Tenn.) terminal, has been transferred to Carbondale, to succeed Mr. Gillam. **J. W. Welling,** division roadmaster at Greenville, Miss., has been transferred to the Memphis terminal, succeeding Mr. Harrington.

R. L. Pearson, engineer, maintenance of way, of the New York, New Haven & Hartford, has been appointed chief engineer to succeed **Edward Gagel,** who retired on October 1. Mr. Pearson's headquarters will be, as before, at New Haven, Conn. **E. E. Oviatt,** former maintenance engineer at New Haven, will succeed Mr. Pearson as engineer, maintenance of way, with headquarters at the same point. **A. L. Bartlett,** formerly division engineer of the New Haven division, becomes maintenance engineer for the western lines, retaining his headquarters at New Haven. He will be succeeded as division engineer of the New Haven division by **G. W. Curtiss. A. A. Cross** has been made division engineer of the Danbury division.

Edward Gagel, chief engineer of the New York, New Haven & Hartford, with headquarters at New Haven, who retired on October 1 after more than half a century of active railroad work, was born at Mount Hope, N. Y., on Oct. 25, 1858. He received his education in the public high school at Mount Hope, and Cooper Institute, New York, and entered railroad service with the Brooklyn, Flatbush & Coney Island Railroad in December, 1877, at the age of nineteen. In April, 1879, he became assistant engineer for the Metropolitan Elevated. Early in the following year he spent a few months as draftsman for the West Side & Yonkers Railway, and in March, 1880, went to the New York & New England (now part of the New Haven) as leveller and draftsman. During the year 1882 he was, successively, a transitman for the Erie & Wyoming Valley, engineer for the Pittsburgh, McKeesport

Edward Gagel

& Youghiogheny, and draftsman for the New York Central. In December, 1882, after five years of experience with seven different railroads, he first entered the service of the New York, New Haven & Hartford as a draftsman. In November, 1885, he was appointed assistant engineer, and in June, 1891, became district engineer. After nine years in this position he again became assistant engineer in July, 1900. In June, 1904, he was made principal assistant engineer, and in October, 1905, was appointed chief engineer for the entire system, a position which he held until his retirement on October 1 of this year.

Mechanical

H. H. Haupt, superintendent of motive power of the Northwestern division of the Pennsylvania, with headquarters at Chicago, has been transferred to the Northern division, with headquarters at Buffalo, N. Y., succeeding **M. R. Reed,** who has been transferred to the Eastern Pennsylvania division, with headquarters at Harrisburg, Pa. Mr. Reed succeeds **C. B. Keiser,** who has been appointed assistant to the general superintendent of motive power of the New York zone, with headquarters at New York. **J. A. Sheedy,** master mechanic at Wilmington, Del., has been promoted to superintendent of motive power of the Northwestern division at Chicago, replacing Mr. Haupt.

Floyd R. Mays, general superintendent of the Yazoo & Mississippi Valley, with headquarters at Memphis, Tenn., has been appointed general superintend-

ent of motive power of the Illinois Central, with headquarters at Chicago, succeeding **R. W. Bell**, who has resigned to enter other business. Mr. Mays has been connected with the Y. & M. V. and the Illinois Central for 28 years. He was born at Crockett, Va., on August 28, 1879, and entered railway service at the age of 15 years as a machinist apprentice on the Norfolk & Western. Later he was advanced to machinist and in 1901 he became a machinist on the Y. & M. V. From October, 1901, to 1917 Mr. Mays served successively as locomotive fireman, locomotive engineman, instructor on transportation rules, traveling engineer, assistant trainmaster and trainmaster. In August, 1917, he was promoted to superintendent of the New Orleans division, with headquarters at Vicksburg, Miss., where he remained until March, 1923, when he was transferred to the Illinois division of the Illinois Central, with headquarters at Champaign, Ill. Mr. Mays was promoted to general superintendent of the Y. & M. V. in January, 1926, and his appointment as general superintendent of motive power of the Illinois Central became effective on October 1. Mr. Bell had been general superintendent of motive power of the Illinois Central for 16 years. He was appointed master mechanic on the Illinois Central at East St. Louis, Ill., in 1902, where he remained until the following year when he was transferred to Waterloo, Iowa. In 1908 he was promoted to assistant superintendent of machinery, with headquarters at Chicago, and in the next year he was again promoted to superintendent of machinery, with headquarters at the same point. Mr. Bell became general superintendent of motive power in 1913, a position he held until his resignation on September 30.

Floyd R. Mays

Obituary

Levi C. Goodale, president of the board of trustees of the Cincinnati Southern (leased to the Cincinnati, New Orleans & Texas Pacific), with headquarters at Cincinnati, Ohio, died at Christ Hospital on September 26 at the age of 86 years. Mr. Goodale had been a member of the board of trustees, the agency through which the City of Cincinnati administers the affairs of the Cincinnati Southern, which it owns, since December 30, 1903, and had been president of the board since 1921.

O. J. Brownrigg, traffic representative of the Canadian National at Yokohama, Japan, died of pneumonia on September 28 in that city.

Charles L. Carpenter, a former railway officer and engineer in Cuba, died of heart disease near Maniwaki, Que., on September 28, while on a canoe trip. Mr. Carpenter, who was 62 years of age, obtained his first railway experience in the United States as a locating engineer on the Boston & Worcester, following his graduation from the Thayer School of Civil Engineering at Dartmouth College. During 1901 and 1902 he served as an assistant engineer on location and construction of the Cuba Eastern (now the Guantanamo & Western). From 1908 to 1912 he was successively superintendent of construction for J. G. White & Co. on the reconstruction of the Cuba Eastern, general manager and chief engineer of the Guantanamo & Western and superintendent of the Ponce & Guayama. Mr. Carpenter had also been engaged on surveys for a Nicaragua canal, and with the Isthmian Canal Commission on surveys and construction of various portions of the Panama canal. Since 1912 he had been vice-president and general manager of the Central Aguirre Sugar Company, with headquarters at Central Aguirre, Porto Rico.

William E. Green, retired railway officer who died at Fulton, Ill., on September 24, was born in that city on September 26, 1853. He entered railway service on April 4, 1868, on the Chicago & Northwestern and later became a trainmaster on the Chicago, Burlington & Northern (now part of the Chicago, Burlington & Quincy). From 1888 to 1896 Mr. Green served successively as trainmaster on the Union Pacific, superintendent on the Oregon Short Line, general yardmaster on the Illinois Central, superintendent of the railroad operating department of the Chicago World's Fair and terminal trainmaster on the Chicago & Alton. From 1896 to 1918 he was successively general superintendent of the Chicago, Hammond & Western, superintendent and general superintendent of the Kansas City, Pittsburg & Gulf (now part of the Kansas City Southern), superintendent on the Atchison, Topeka & Santa Fe, first vice-president and general superintendent of the St. Louis Southwestern, vice-president and general manager of the Trinity & Brazos Valley, vice-president and general manager and president of the Denver, Laramie & Northwestern (now dismantled), general superintendent of the Midland Valley and president of the Colorado, Wyoming & Eastern (now the Laramie, North Park & Western). On November 11, 1918, Mr. Green was appointed assistant general manager of the Denver & Rio Grande, serving with that railroad and its successor, the Denver & Rio Grande Western, in the same capacity until November, 1922, when he was appointed a member of the Train Service Board of Adjustment of the Western Region at Chicago. He retired from that position and from active railway service on January 15, 1925.

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Interior View of the New "Arrow," Chicago-Omaha Train of the Milwaukee